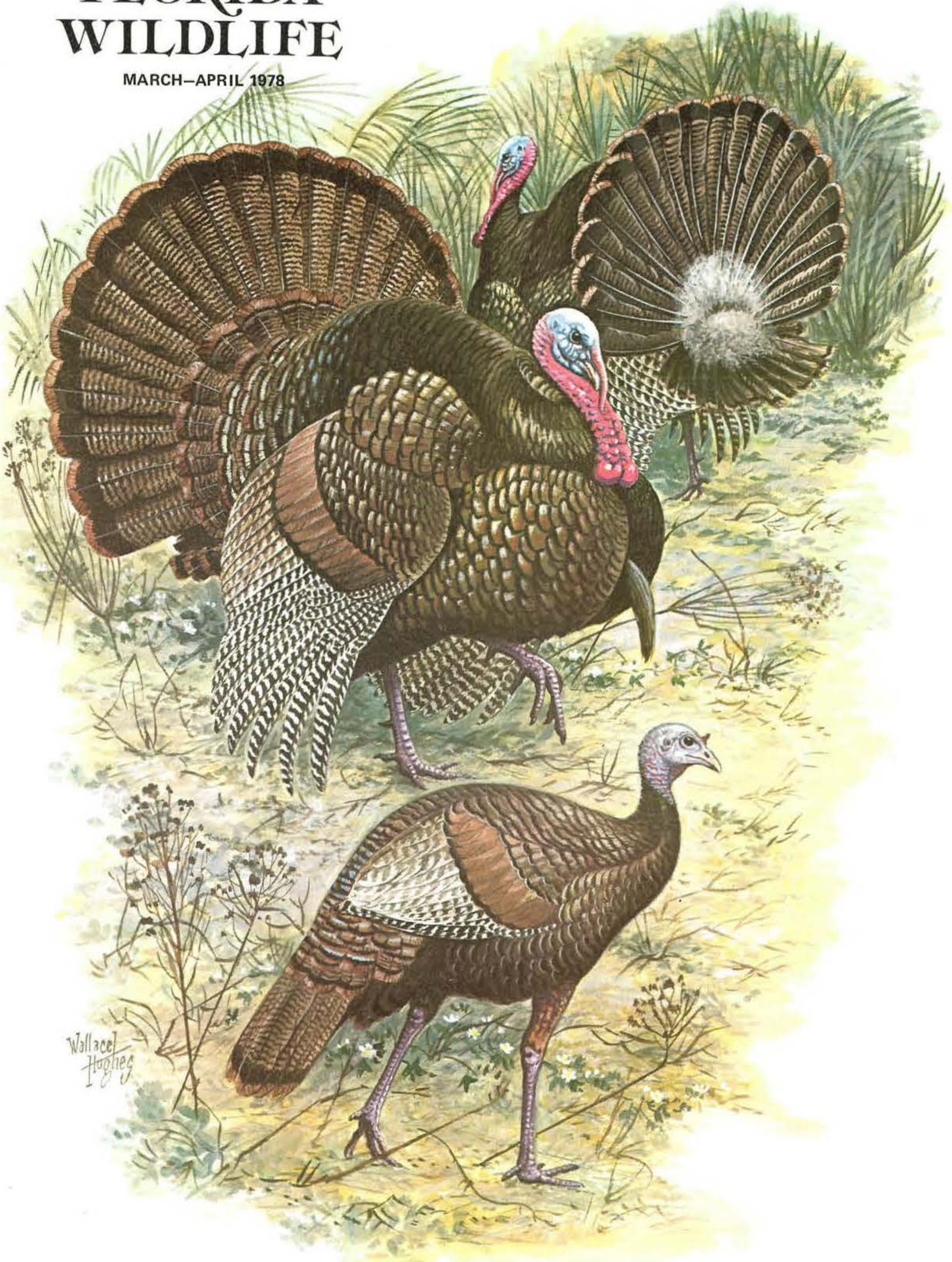
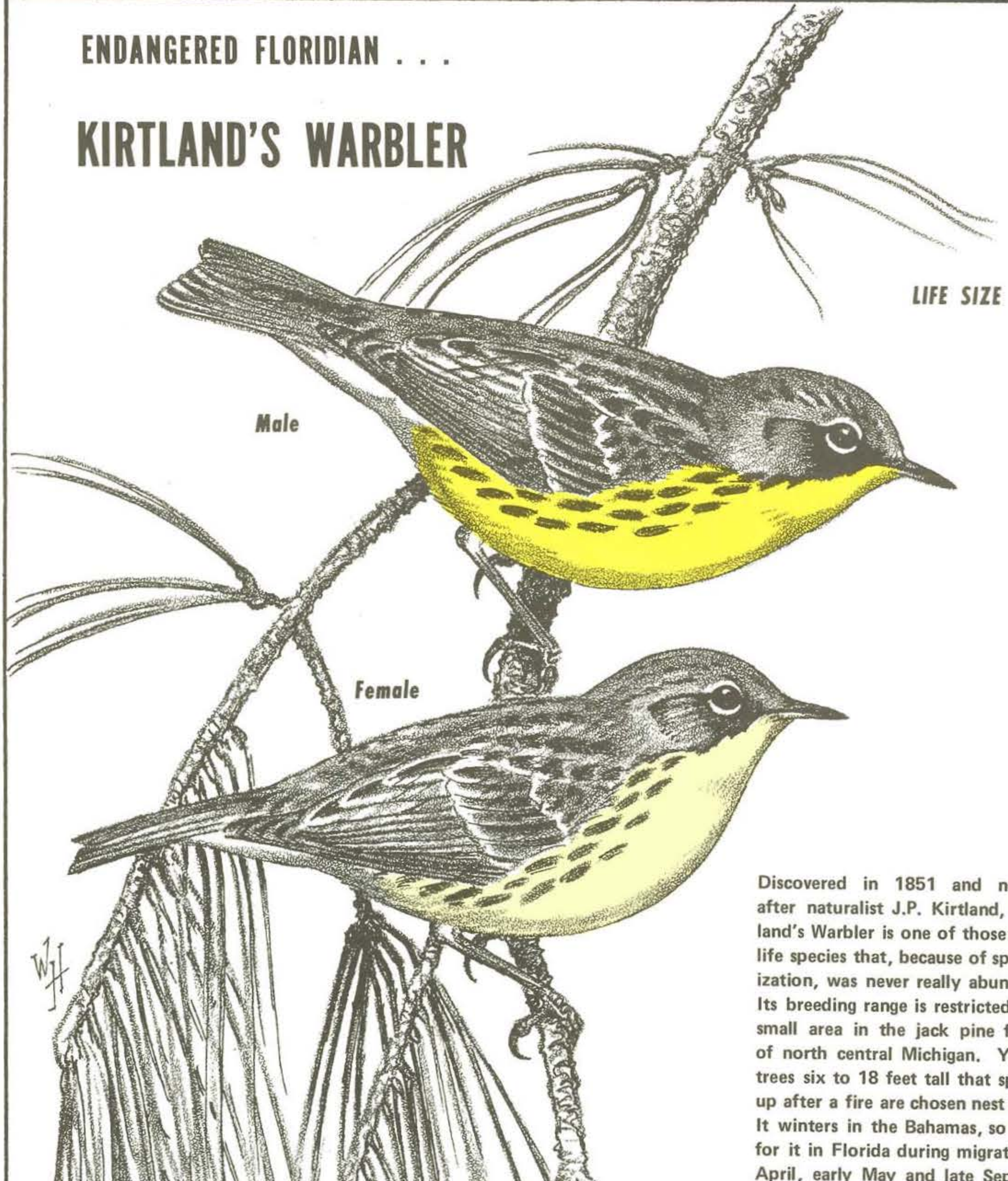
FLORIDA WILDLIFE

MARCH—APRIL 1978



ENDANGERED FLORIDIAN . . .

KIRTLAND'S WARBLER



Discovered in 1851 and named after naturalist J.P. Kirtland, Kirtland's Warbler is one of those wildlife species that, because of specialization, was never really abundant. Its breeding range is restricted to a small area in the jack pine forest of north central Michigan. Young trees six to 18 feet tall that sprout up after a fire are chosen nest sites. It winters in the Bahamas, so look for it in Florida during migration—April, early May and late September to early November. A low-ranging bird, it frequents pine and oak stands, spending much time on the ground searching for insect food. A tail-bobbing habit helps to identify it. Only two other warblers tail-bob—the Palm and Prairie Warblers.

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FLORIDA WILDLIFE

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The Cover

Two wild turkey gobblers respond to the urgings of the spring season with the strutting of the mating ritual while a hen feigns indifference as she saunters by.

From a painting by Wallace Hughes

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American Attitudes Toward Wildlife

Part 2

With the appearance of national periodicals like *American Sportsman* (1871), *Forest and Stream* (1873), *Field and Stream* (1874) and *American Angler* (1881), a new impetus was given to the sportsmen's struggle against commercial exploitation of wildlife. While the nation as a whole remained indifferent, these journals, in issue after issue, poured forth a steady stream of propaganda against the market men. Besides enumerating specific offenses, the main technique used was to teach the American public the ethics and responsibilities of sportsmanship.

In addition to opposing the commercial destruction of wildlife itself, sportsmen deeply regretted the loss of "their" hunting ,and fishing grounds to the insatiable appetite of commerce. While most other Americans saw land only as a commodity of capitalism, sportsmen viewed it as the necessary context of their sport.

Every hunter and angler had his own favorite microcosm composed of woodlots, swamps, ponds and other topographical features. On a larger scale the little world of the sportsman might be a whole geographical entity like the Adirondacks in New York State or Currituck Sound in North Carolina. But whatever and wherever his "territory," it was part of the fiber of every sportsman's existence.

In their love for the outdoors, sporting authors of the last century were, of course, influenced by the same Romantic movement that touched every major American writer from Thomas Jefferson to Walt Whitman. Sportsmen, too, paid tribute to nature and derived inspiration from wild grandeur. Even when it came to basic guidebooks, hunting and angling locations were continually rated in terms of their picturesque qualities.

But despite these similarities, there were significant differences between the Romantic movement and the sporting tradition as they evolved in the United States. For one thing, the Romantic movement in the arts originated in Germany and France late in the 18th century, while the American sporting tradition originated in the British Isles and dates back at least to Izaak Walton in the 17th century—indeed, many would take it back to the ancient world.

Photo by Jim Floyd

Another difference is that Romantics often seemed content merely to stroll though a "sylvan glade" and contemplate the "beauty" around them, while sportsmen wished to involve themselves personally in the rhythms of nature by pursuing and capturing a momentary fragment of that beauty in the form of a ruffed grouse or brook trout. The Romantics appear almost voyeuristic, while the sportsmen were participants.

This is undoubtedly one reason why the latter group often combined serious scientific inquiry with their love of nature, while Romantics were usually little more than dilettantes in science and sometimes, as in the case of Ralph Waldo Emerson, even hostile to it because of the fear that its application might unravel the mysteries of nature.

Another example of the voyeur-versusparticipant analogy is the fact that most Romantics only had eyes for the "beautiful" and "scenic" in nature. Like their modern counterparts, they had little use for "ugly" topography like inland swamp and coastal marsh. To the sportsman, however, so-called wastelands were frequently the repositories of fond memories and keen anticipations. Indeed, the word "swamp" is still a synonym for worthless land, a place often considered to be fit only for dumping garbage. As their financial support proves, 20th century waterfowl hunters have had a very different notion of its value.

Though we could spend much more time discussing the impact of early sportsmen, it is sufficient to say that once the organized sportsmen's movement of the 1870s came into existence, this group's power continued to grow and its viewpoint eventually dominated almost all discussions and policy decisions relating to wildlife. This became even more apparent in the 1930s, and later, with the development of the science of wildlife management and Aldo Leopold's idea that wildlife is a crop that should be managed and harvested like corn or cattle.

This does not mean that other approaches to wildlife had not been offered. Wildlife refuges existed in sizable numbers—Theodore Roosevelt had set aside over 50 such units and the system was enlarged when his cousin, Franklin, came into office in the 30s. Yet, even these areas were opened to so-called "harvests" when biologists and wildlife management specialists argued that "surplus" wildlife on the refuges would be "wasted" if it was not used.

Thus, what we see in the period after 1933—when Leopold's book *Game Management* appeared—is the growth of a huge biological-recreational system supported by sportsmen's money (hunting and fishing licenses, duck stamps, taxes, etc.) and staffed by biologists, wildlife management experts, and federal and state game commissioners.

On the whole, this system has worked amazingly well. Not only has a vast amount of recreation been provided, but game animals and birds have prospered as well. White-tailed deer are more common today than when Columbus landed, and species like elk and wild turkey, which seemed to be heading for extinction in 1900, have been restored to large areas. Just one example of bird management is the mourning dove. *Audubon* magazine reported that "200 million doves die annually from natural causes, and 20 million fall to hunters. Yet the dove population remains healthy and stable at 400 million."

Yet, despite the successes of this wildlife management system, the entire structure has recently

(continued on next page)

60 million hunters and fishermen pay $318 million for licenses each year. Most of this money is used for wildlife restoration and management. Wildlife management areas (below) provide haven for all wildlife, not just game species.

By John F. Reiger

Photo by Gene Smith

(continued from preceding page)

come under fire from what might be called the "new environmentalists," who first made their public appearance in the late 1960s. City-bred, well-educated, and convinced of its own moral righteousness, this new movement's knowledge of wildlife appears to derive almost completely from television and movies and its actual experience with the natural world seems small, and in many cases, nonexistent. Almost all of its members find hunting distasteful, if not immoral, and even sport fishing has come under attack because it deliberately prolongs the fish's supposed "agony."

Many of those who follow Cleveland Amory and other vocal spokesmen of this "new" environmentalism seem to possess a highly Romantic, even anti-intellectual, response to everything pertaining to the natural world, and even though this group's power appears to be waning somewhat with a general trend toward greater conservatism in the late 1970s, these new, self-proclaimed "conservationists" will undoubtedly play a larger role in decision making then they did in the past.

Despite my dislike for their self-righteous refusal to accept the reality of wildlife dynamics and the fact that certain species *do* produce surpluses that can be used by another species, the predator *Homo sapiens*, I am perfectly willing to accept at least one of their arguments. The fact is that sportsmen can not go on almost single-handedly footing the bill for wildlife conservation and exercising a near monopoly on wildlife decision making.

It may be true that sportsmen and sportswomen still make up the great majority of Americans concerned with wildlife—hunters alone in this country number about 21 million, almost the same number as the total black population of the United States. By comparison, the largest private conservation organizations (aside from sportsmen-oriented Ducks Unlimited) are equivalent to only a small fraction of the total number of hunters. If we bring sport anglers into the picture and the fact that a large percentage of the membership of the National Wildlife Federation and Audubon Society are hunters and/or fishermen, we can see that sportsmen still possess the lion's share of the power in the wildlife field.

But despite the continuing influence of gunners and anglers, the new environmentalists make up a significant percentage of those concerned about wildlife, and their ranks appear to be growing among the young. If Americans who do not hunt or fish wish to have a greater impact on the conservation of wildlife, they must be willing to pay for it through special taxes on outdoor equipment, songbird stamps (like duck stamps) and similar innovations. The most important development in the whole wildlife field in the coming years may be whether or not nonsportsmen will be able to wrest leadership away from sportsmen and their allies—or whether they will even be able to muster enough strength in the American population at large to seriously threaten the sportsmen's position.

If, as feared, the friction between the two groups does continue to grow, it can only result in further setbacks for wildlife conservation. In a country where these two groups are the *only* major segments of the population that really care about the future of wildlife, it is terribly unfortunate that they should be constantly at each other's throats. While they engage in fruitless battles, massive habitat destruction—which is the real enemy of wildlife—goes on apace. If both antagonists could accept at least part of the other's argument, then a common ground might be reached. Hunters who break the law with abandon must be apprehended and their hunting rights taken away; it is also true that the federal government has to start spending as much money for songbird habitat as it does for so-called "duck factories." But for their part, the proponents of Cleveland Amory's moral approach to wildlife conservation might try learning something about the ecology of the species they profess to love and accept the fact that in order to live, everyone continually has to kill, directly or indirectly. And this is just as true for the vegetarian as it is for the habitual meat-eater. By coming back to earth, the "new" environmentalists can join with the old fashioned users of wildlife and present a united front against the rest of the country, which cares little or nothing about the destiny of America's wild heritage. ●

A working illustration of good wildlife management is America's stable 400 million mourning dove population.

Photo by Wallace Hughes

THE CHAIRMAN COMMENTS

By DONALD G. RHODES, D. D. S.
Chairman, Game and Fresh Water Fish Commission

Each year, more and more land in Florida undergoes a transformation. Habitat which once belonged to the state's wildlife becomes that of its human inhabitants. This rapid development is coupled with an ever increasing human population which has placed a strain on Florida's natural resources.

The conservation movement, popular in the late 1960's and early 1970's, has made many conscious of what can happen if growth is not orderly and constructive. But still more needs to be done if future generations are to realize the benefits of our priceless natural heritage.

There is a concerned group of people at the Commission who have been devoting time and energy to spreading the conservation message across the state. As members of the Office of Informational Services (OIS), their work is helping people understand man's part in the delicate web of life.

The message is carried through many media —talks, articles, exhibits, television, radio and personal appearances. It is also one which, traditionally, has not received adequate funds to reach all audiences.

This situation is not unique to Florida. A check with information offices in just about all state conservation agencies will reveal this part of the conservation team is often at the bottom of the financial totem pole.

Education of Floridians to the role played by man in his natural environment is essential to preserving it for generations to come.

One area where OIS works to develop a positive attitude towards man and his natural environment is through the operation of the Commission's Youth Conservation Camps.

In 1952, under canvas tents at a borrowed campsite, the first youth camp was held in the Ocala National Forest. Since that time, two permanent facilities have been built, one near Lake Eaton in the Ocala National Forest and the other in the Corbett Wildlife Management Area near West Palm Beach.

From the start they have operated on a little bit of money, a lot of love for the job and an awful lot of help from their friends. The camps would never have been possible without donations from interested citizens, sportsmen's groups and private individuals, many times anonymously. Everything from roofing material to and including kitchen sinks have been contributed, plus untold hours of volunteer labor.

This past summer, more than 1,000 youngsters spent part of their summer discovering some of the wonders of nature, acquiring outdoor skills and an understanding of basic wildlife biology.

Both camps have always rated high with campers. The return rate is outstanding, with many campers coming back year after year and eventually becoming counselors. Fees have been kept low to enable a broad base of campers to attend and several organizations have sponsored kids who might not otherwise have been able to attend.

But the 25 years of scrounging and making do with secondhand and sometimes not-so-new freebies are beginning to tell. Funds have not been appropriated for major repairs and renovations the facilities need. Unless more funds are forthcoming, the end could be near for the senior camp at Lake Eaton. Such a loss would be tragic.

What has been opened up through the camps has been a deeper understanding and appreciation of man and wildlife. If the children of today, the citizens of tomorrow, do not learn that a planet unfit for wildlife is unfit for man, there will be no future for the planet. The camps have been able to get this message across during the summer months. However, this message should not be allowed to remain dormant for the other nine months. This educational program should be expanded year-round to include the schools.

I have always believed that the best way to teach concern for man's dependence on his natural resources is through children, and no better time than during the formative years they spend in school.

Attitudes learned through childhood stay with an individual. While you or I might find it difficult to reeducate an old game violator, a child brought up with a respect and reverence for wildlife management would be less likely to break the laws protecting the resources.

Beside basic understanding of man and nature, expansion of the Hunter and Firearm Safety Training programs into the schools would be beneficial. In fact, it has already begun in some sections of the state.

The program is not designed to make sharpshooters out of anyone, but tries to instill a respect for firearms whether in the field or home. It can go a long way in reducing the number of firearm accidents.

It is interesting to note here that, since the program was initiated, to the best of our knowledge, not a single graduate of the course has ever been involved in a firearm accident. A basic knowledge and respect for firearms at an early age might prevent these words from ever being spoken again—"But, I didn't think it was loaded."

The goals of the Office of Informational Services are consistent with the philosophy of the Commission and sportsmen of Florida—to insure that those who come after us can enjoy the natural resource values with which we have been blessed. ●

Match Boat to Water

what the natives use is most often the best craft for local conditions

By CHARLES WATERMAN

Call them "drift boats," "float boats" or what you will, the craft used by fishermen to go downstream with are almost as varied as the geography they're found in.

Of course it depends partly on the kind of water they're used in, Florida not being noted for roaring rapids and Idaho not being noted for glassy glides, but as with other kinds of craft the local style makes a difference.

Last summer while chasing trout through the West I noted more and more "float guides" using what's known as the McKenzie boat. It's high both bow and stern, it's run with oars and it goes downstream bow first with the oarsman facing forward. Most of his rowing is pulling instead of pushing on the oars. That is, he's holding back against the current.

Incidentally, it takes a bit of practice to steer that way, even for somebody used to both pushing and pulling on oars, but the McKenzie boat is one of the safest of all rigid hulls in swift water, and would ride out a heck of a storm on a lake too. It is very similar to the dories used for centuries by offshore commercial fishermen, especially on the Grand Banks of the North Atlantic where the dories have been carried aboard a ship and lowered for the actual fishing.

Some of the McKenzie boats will accommodate a fisherman in the bow and another in the stern in addition to the oarsman. Others handle only one caster in the bow and that makes for lots of waste space. On most western rivers the fishermen stop at intervals to cast from shore or by wading.

The McKenzie has very high sides and is hard to handle in a wind. If there's a use for it on Florida fresh water I haven't found it. It's too bulky to cartop and isn't made for speed with an outboard. It's plywood, aluminum or fiberglass.

Another guide boat being used a great deal on those fast rivers is the ordinary johnboat, generally about 14 feet long and light weight. They use small motors with them sometimes. This is the same aluminum boat used in Florida and it's operated with oars. It doesn't show up on extremely fast water and, like the McKenzie, it's held back against the current.

The rubber rafts were Number One when I first went out West for trout but guides now use them mainly in the fastest rivers. Some of the larger ones are fitted to a metal frame that adds to their rigidity and when it's a matter of just taking the tourists for a ride through white water it's the big rubber raft that does the job.

Actually, I suppose the inflated boat is safest of all although it's apt to be wet and uncomfortable. Westerners have a carefree attitude about rivers and quite a few of them drown. Honest! Almost any weekend on the medium-speed rivers you'll find a few boatmen clinging to willows and a boat or two hung up on a bridge abutment. Water-filled canoes coming downstream alone don't get too much attention.

Much as I love canoes I must admit they're a poor choice to fish from in fast water. The principle is simple: You gain your steerage with a canoe from its forward motion and instead of holding it slower than the current as is accomplished with the other types of craft, you must drive it faster than the current to steer it. Thus you have your current speed plus your paddle speed and the trees go by like a picket fence. It's fine for hurrying from one good fishing spot to another and for most Florida streams it's fine as a drift boat.

Now if anyone wanted to rig one with oars and row it upstream it might work for fast-water fishing but I think I'd go to something else.

Many of the old round-bottomed rowboats would do pretty well for drifting in streams of modest speed but most of them were pretty heavy. Where paddles and oars used to do the job on slow rivers the electric motors are in charge now.

Long time ago there was some argument as to whether fish sleep or not. At about that time they were just starting to use fathometers and some of the early electronic equipment showed big schools of fish of various kinds seemingly dormant near the bottom or suspended somewhat higher. They wouldn't bite.

We still find large numbers of fish that won't bite on certain days but we're too sophisticated now to mention sleep.

In the case of bass, for example, I have had veteran guides swear that patience would win.

"You know they're going to feed some time every day!" they'd announce.

I accepted that as gospel. Now we know that there are many days when many fish don't feed at all. The reasons they won't feed would fill a considerable volume. The biggest challenge of the fish student today is not so much what a fish will take but when he will and when he won't. And some of them are coming up with some pretty good answers. They'll get better.

Do fish sleep? I don't know that it makes much difference whether they do or not.

"Nervous water" is a common term among Florida Keys fishermen. When looking for working fish they see surface movements that are too vague to actually be called "wakes" but are certainly caused by something alive. Even the gentle fin movements of loafing fish can cause "nervous water" if it's shallow enough. But there's a special variety of it that intrigues me.

Years ago when hunting tarpon in the Everglades with an experienced guide I was staring across the placid surface of a bay and seeing nothing of consequence when the guide announced: "There's a big one over there. I saw him shiver."

He finally pointed it out to me. It was a patch of water that seemed to vibrate at intervals. From a distance you might mistake it for the tiny waves put out by an insect that had accidentally fallen in, but it wasn't. There was a big loafing tarpon under the quiver all right and I've seen it many times since. I guess they really do shiver but it isn't a widely used description of what happens. Nobody has told me what causes it.

For years I have been fighting a losing battle with editors of outdoor publications, *Florida Wildlife* ones excepted for some reason.

For one thing, most editors refuse to accept the word *hammock* as applied to a patch of high ground in the South. This one they are going to change to *hummock*, come hell or high water (and I'd rather be on a *hammock* if the creek does rise). *Hammock* refers to a larger patch of ground, generally covered with forest. A *hummock* is a lump of ground you stand on with your feet close together. At least I think that's the way it is. After 30 years of seeing my *hammocks* come out as *hummocks*, I am beginning to get a bit unsure myself.

And then there is the trot line business. Everybody south of Iowa should know that a *trot line* is a heavy piece of cord strung out through the depths with lighter pieces suspended from it, each carrying a hook. The thing is a bit similar to the *longline* used by commercial fishermen in the oceans but that's immaterial. It is not, dammit, a *trout line* as my *trot lines* generally appear in print. This one has reached a point where I almost refuse to write about trot lines.

And there is the "rising fish" business. Otherwise

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McKenzie type of drift boat in use on a western river. High bow and stern handle rough water.

Photo by Charles Waterman

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persnickity grammarians seem to go berserk when faced with a "rising fish" and a fisherman. They keep insisting that when a fisherman throws a lure and a fish comes up he *rose* a fish. Any fifth grader should know that a fish *rises* and that when you make him come up you *raise* him to your lure. The fish *rose* but you *raised* him.

And there's the fish that *lies* under a rock. The danged fish does not *lay* there; he *lies* there. You might lay him under a rock (don't see much point in it) but once he's there he's *lying* under it.

The fact is I am not writing this to entertain you readers at all. I am writing it so that when the magazine comes out I can make copies and send them to every editor I know. There is added credence to something that's been printed. (Ed's note: We agree. Common usage makes it acceptable.)

At one time or another almost everything from mudfish to killer whales has been touted as the answer to an angler's prayer. I'm something of a dolphin fan myself and there'd be more of us if dolphin were caught on lighter tackle. Their reputation suffers from people hooking them when looking for something bigger.

They run fast, jump high and yank hard but you seldom hear anyone announce that he's a dolphin specialist. Maybe it's because dolphin can get too easy sometimes.

My first experience with dolphin on a flyrod was up off North Carolina's Cape Hatteras. The skipper trolled until he found a school of small dolphin that jumped in the wake like painted spray. The mate left one of them on a hook to keep the rest of them interested. After that, Joel Arrington and I caught small dolphin on fly rods and spinning tackle until it began to get a little tiresome. The mate tossed out a little chum. Never thought I'd get tired of catching dolphin of any size.

The skipper broke out his lunch and when he tossed some scraps overboard the little dolphin accepted them gratefully too. The fish were running less than five pounds and were willing to take popping bugs, streamer flies, jigs, spoons or fried chicken without much preference. The school kept getting smaller and smaller and finally there were only a dozen or so darting around, under and behind the cruiser. We'd caught a batch of them but some of the others apparently figured something underhanded was going on. We left.

The next time I got into dolphin with a fly rod it was with Bob Montgomery, the Key West guide, and Ray Donnersberger of Summerland Key. That time Bob trolled up a good-sized female with heavy tackle and then had me throw a streamer fly to the bull which accompanied her. That one nearly uprooted my arms, kept me busy for an hour and won a local fishing contest.

Photo by Charles Waterman

School dolphin of the Gulf stream

There's a rather special thing about dolphin in that they're found next to floating objects ranging from five miles of seaweed to an old orange crate —and a 20-pounder might be floating under a stick that wouldn't hide a spawned-out crappie. It's fun to cast to such cover.

Why do they like floating things? Well, it's partly because baitfish are likely to stick around such shelter but I suspect that floating reference points are valued as a sort of home base.

Anyway, some time when you're clear out there in the Gulf Stream and the sailfish, swordfish or whatever aren't cooperative, trim the tackle down to the right size and start dolphin fishing on purpose. Then you can join the Dolphin Admiration Society too.

A fellow I knew had a private trout pond up north. It was impossible for him to understand why certain fishermen preferred to seek wild trout when he had such big ones that were so easy to catch, and he made it as plush as possible with manicured lawns and chairs about his pool.

However, there was one big ledge that made a shaded hideyhole for some of the bigger fish and you couldn't cast back in there.

"I have it all worked out," he told me triumphantly. "I'm gonna' rig it so I can give them a little electrical shock back there when I want them and they'll come out where I can catch 'em."

Ah, wilderness! ●

TURN ON TO BIRDS

Do you remember the stereotyped birdwatchers of several years back? Cartoons pictured them as "little old ladies in tennis shoes." Well, times have changed. Birdwatching, or birding, is now a top ranking recreational activity across the entire United States. More and more people are taking to the woods to breathe fresh air, get some exercise and enjoy birds. Why don't you join the ranks?

You'll benefit by getting out of doors and coming into close contact with nature. An early morning walk combined with birding is one of the best forms of physical exercise and mental relaxation there is. Observing birds in their natural environment will provide delightful insights into the behavior of wild animals. You'll begin to notice and appreciate the delicate relationship between man and wildlife. And you'll realize that without the presence of wild animals and natural areas our existence on planet earth would be much less enjoyable.

Photo by William A. Greer

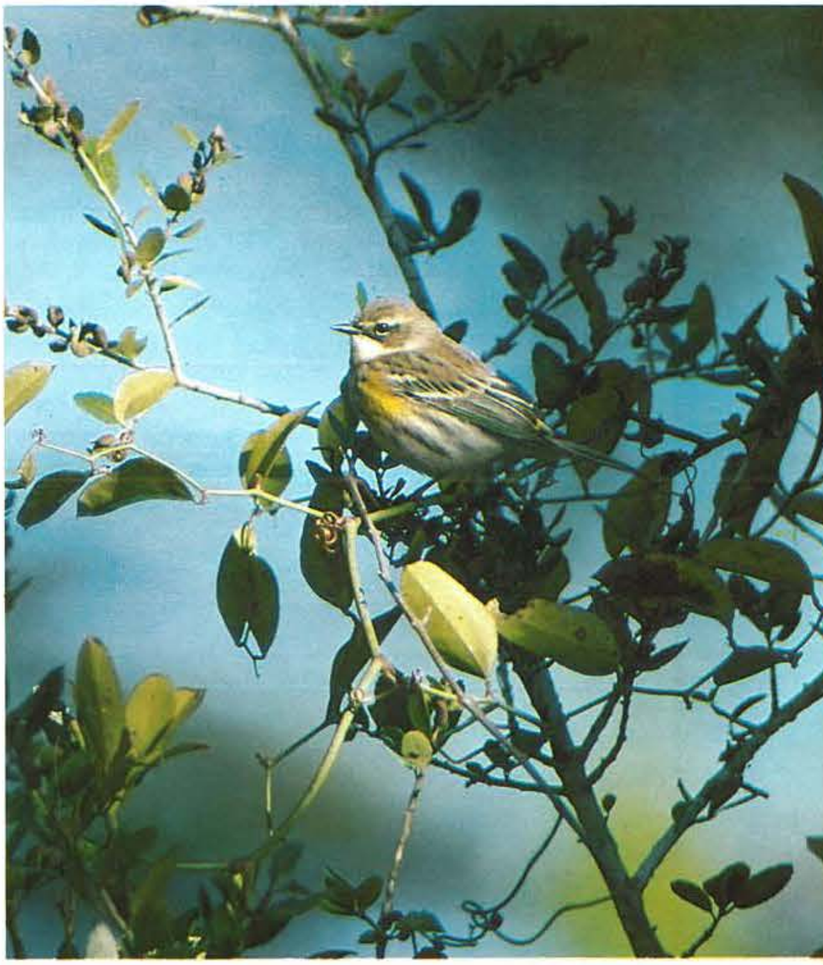

Photo by Jim Greene

There are several hundred different species of birds found in Florida. With that many species to observe, birding may at first seem very difficult. Where should one look for birds? How can anyone identify these tiny, flighty creatures? How in the world do you use binoculars? Does anyone else do this sort of thing? These are questions most often asked by beginning birders. The answers are simple, and once understood will lead you on the way to a most rewarding hobby.

Birds are found everywhere, from the middle of large cities, to the ocean, to the deepest forest. They are the most abundant, colorful, and visible form of

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Not all birdwatchers fit the tennis-shoed grandmother stereotype. Dont't knock the hobby until you've tried it, says the author. It can give purpose, if nothing else, to your woods rambling. Relatively easy to identify in a generally tough-to-recognize group is the myrtle warbler, above.

By Rick Schroeder

(continued from preceding page)

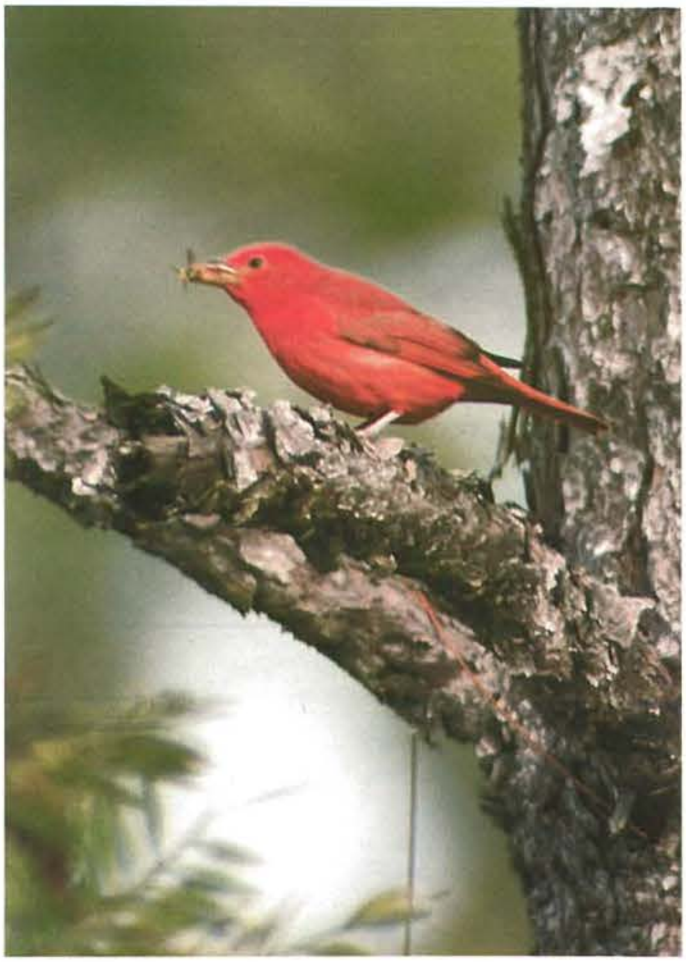
wildlife that most people see in their daily lives. You don't have to live in the country to find birds. The average backyard is home to twenty or thirty different species during the year. Local parks, greenbelts, and open fields are all good places to birdwatch.

The best birding spots contain a variety of plant types and plant growth forms. Areas with an interspersion of trees, shrubs, grasses or marsh will have the largest variety of birds. Florida's national and state parks, and wildlife refuges are excellent places to observe and enjoy birds.

So, you know where to look, now—how do you identify the birds you see? A pair of binoculars and a field guide are the only pieces of equipment you'll need. Going out with an experienced birder is a good way to begin. Many communities have local bird clubs, with expert birdwatchers as members. These folks are usually more than willing to take along an inexperienced birder and "show him the ropes".

The best time of day to observe birds is in the

Photo by Jim Greene



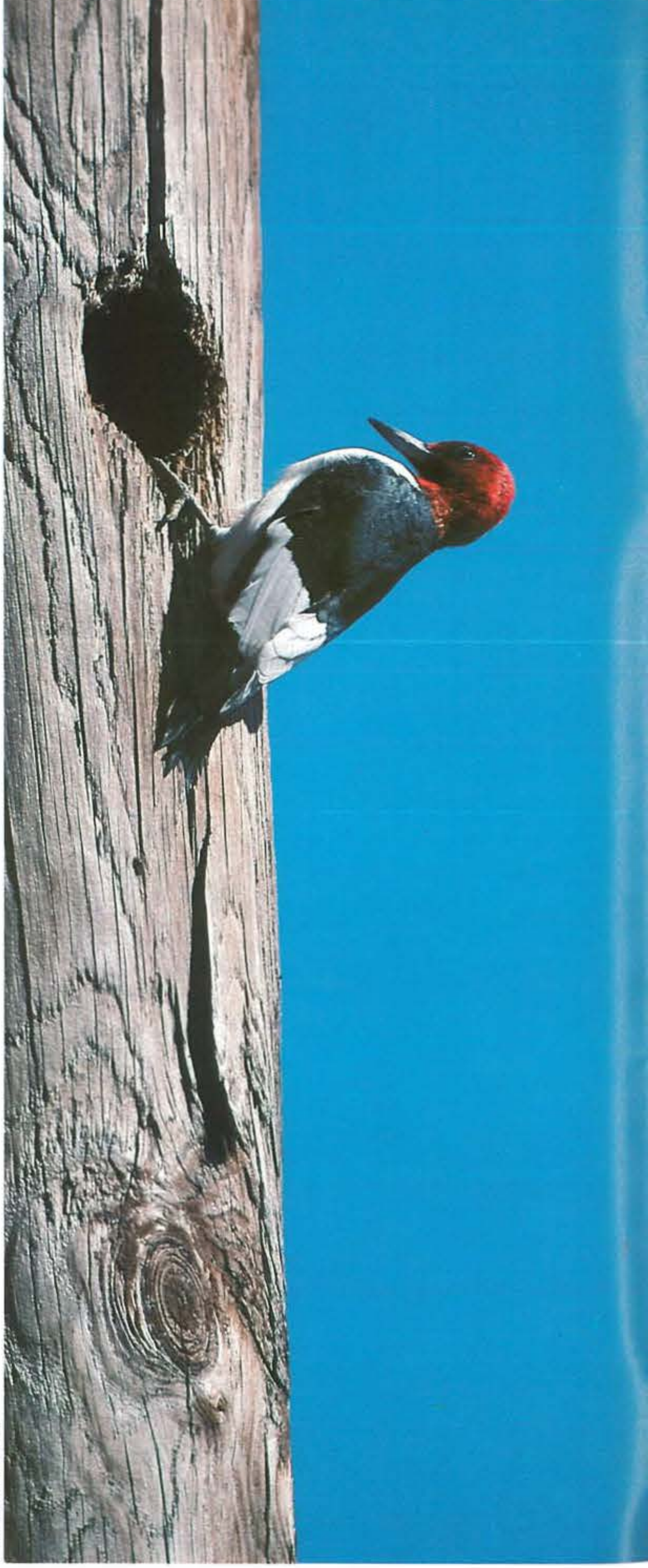


Photo by Ron Franklin

The summer tanager, or "summer redbird", left, is a species of the open woodlands. It commonly frequents tracts of pine timber and is often seen about tree-grown yards. All red head and the large white area on the wings readily identify red-headed woodpecker, above. The loggerhead shrike, upper right, is also known as a butcherbird, from its habit of impaling grasshoppers, crickets and other game on thorn or fence barb. Many communities have local groups of birdwatchers who stage group field trips—a good chance to hobnob with others who have interests similar to theirs.

Photo by Ron Franklin

morning hours. Birds are most active then and can be seen more easily. Upon spotting a bird, watch it for as long as you can. Note its coloration, size, shape, and activities. What type of habitat is it occupying? Listen for its song or call notes. Study as much as you can about the bird and try to classify it down to the "family" level. Is it a sparrow, thrush, small shorebird, hawk, etc.?

At this point open your field guide and try to identify the bird exactly. Go to the section containing similar birds and check coloration and markings. Read the narrative for helpful hints, such as song or habitat descriptions.

Many beginning birders see a glimpse of a bird, and immediately flip through their field guide and attempt to identify it. When they look up, the bird has long since vanished, its identity unknown. A fleeting glimpse of a blue-colored bird may tempt you to grab your bird book. After all, how many bluish birds can there be? Several . . . including the indigo bunting, blue grosbeak, black-throated blue warbler, blue-gray gnatcatcher, and eastern

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Photo by William A. Greer

Photo by Lynn Stone

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bluebird. A few minutes of observation, followed by a check in the field guide, will result in more efficient and accurate bird identification.

Certain species are difficult to distinguish no matter how carefully you observe them. Warblers, sparrows, and shorebirds are especially difficult groups. Patience and repeated sightings will be necessary to clinch the identity of birds in these families.

On the other hand, identification of many birds is easy once you've first studied them. The common cardinal, blue jay, and robin cannot be confused with many other species. And who could mistake the beautiful male painted bunting for anything else?

Binoculars are the other piece of equipment needed for successful birding. The most common birding glasses are dependable 7X35s. At seven power, they are easily hand held and they are good for low light or daylight viewing. For birding in semi-dark conditions or in shadowy undergrowth, 7X50s are preferred. The larger diameter objective lens produces a lighter image than 7X35s.

Wide angle binoculars are helpful when trying to follow quick flying birds. The wider field of view makes it easier to keep a fast moving bird in sight. Wide angles are slightly bulkier than a standard glass and may be more cumbersome to use.

For distance viewing, 10X50 binoculars, or even more powerful spotting scopes, are well suited. Seabirds, especially, are almost impossible to identify without such high powered glasses. Remember that you'll need a tripod or other support for sustained observation with a ten power or stronger lens.

Spotting small birds with binoculars is not as easy as it might seem. Keep your eyes on the bird while you bring the binoculars up. Look for a prominent rock or branch near the bird and use this as a guiding point. For birds in flight, you can sight directly over your binoculars and aim at the bird. With practice you will hit the target on the first try.

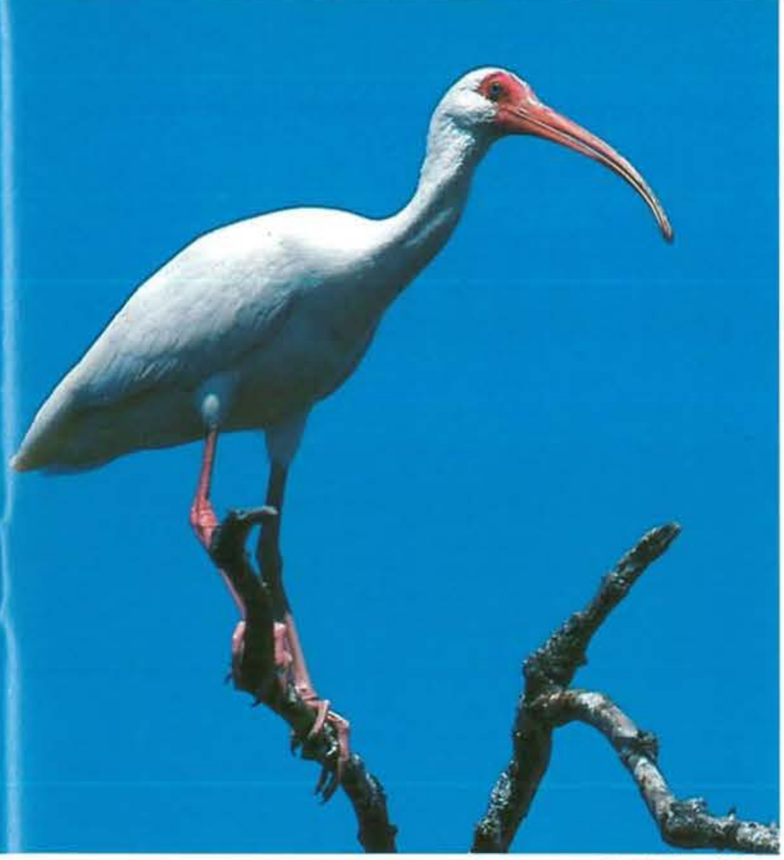

Photo by Lynn Stone

Photo by Wallace Hughes

Once you decide to pick up your binoculars and field guide and give birding a try, don't be shy. You'll be surprised to learn how many other people are discovering birds too. Evidence of the boom in birdwatcher numbers can be seen in the membership of such groups as the National Audubon Society. In 1960, the Society had only 32,000 members. Today they number over 300,000. Sales of bird books, binoculars, and bird seed are blossoming into large scale figures. And the end is not in sight.

An excellent way to get more involved in birding is to participate in the annual Christmas Bird Count. Experienced and novice birders combine forces in late December to count as many species as possible in designated areas. The count is taken during a twenty four hour period, and is a good source of both scientific data and good companionship.

Florida has over thirty organized counts covering all parts of the state. One of the most successful counts (in terms of numbers of species) is at Cocoa. Over 180 species have been sighted there in recent years, ranging from bald eagles to ruby-throated hummingbirds. For a complete listing of count sites in Florida and the rest of the United States, check your library for the April issue of the American Birds Magazine, published by the National Audubon Society. This issue contains a complete list of count sites, numbers and species of birds, and participants.

Today's increased interest in birds is not just an accidental occurrence. People are more concerned about their environment than ever before. Everyone, it seems, is more aware of nature and the delicate relationship between man and his surroundings. Studying and enjoying birds is one way to be involved and to keep in touch with the natural world.

A day doesn't pass when you're outdoors and don't see a wild bird. For a small investment in time and money you can embark on a hobby that can be done anywhere, anytime. Don't let that "old lady in tennis shoes" image fool you. With over 20,000,000 birders in the United States you won't be the first one to turn on to birds. ●

The coloration and the unusual spatula-shaped bill easily identify the roseate spoonbill, left. The southern end of the peninsula and the Keys are the most likely areas to see this species. White ibis, above, is a standout with its long, down-curved bill, and the adult's white plumage. Perhaps the most often encountered of the large birds of prey is red-shouldered hawk, left. Bold pattern of the adult bird marks it well.

ARMADILLO -

Photo by Steve Nesbitt

If you've ever tried to capture an armadillo by hand, you know that the critter is a skilled broken-field runner, and possesses surprising strength and energy. As table fare, the hairy-foot rates at least a couple of stars.

By Steve Nesbitt

extending its range in Florida since 1920

As all Latin scholars know, *Dasypus novemcinctus* is the "nine-banded, hairy-foot." The rest of us know it by its Spanish name, armadillo. But how did this species of the southcentral United States, Mexico, Central and South America get into Florida?

The armadillo has been spreading its range north and east, but the Florida population resulted from at least three accidental or deliberate introductions. The first occurred about 1920 near Hialeah. Then during a 1924 storm, several animals escaped from a private zoo near Cocoa. When a circus truck overturned near Titusville in 1936, additional armadillos were liberated. The armadillo has since spread over all of peninsular Florida.

The armadillo has been labeled a nuisance by many. Their burrows represent a potential threat to livestock. They divert hunting dogs that should be giving their attention to more serious business. An imagined necrophilic tendency has given rise to the nickname "grave diggers."

Armadillos have been accused of eating the eggs of ground nesting birds and severely limiting populations of quail and turkeys. Though many of the armadillo nuisance qualities are undeniable, egg eating has been proven inconsequential. Many studies of the armadillo's diet, some specifically aimed at egg eating, have proven that, though the armadillo will eat eggs, it does it so infrequently that the impact on ground nesting birds is negligible.

Population increases of armadillos may follow a wet year when feeding is good, during such times

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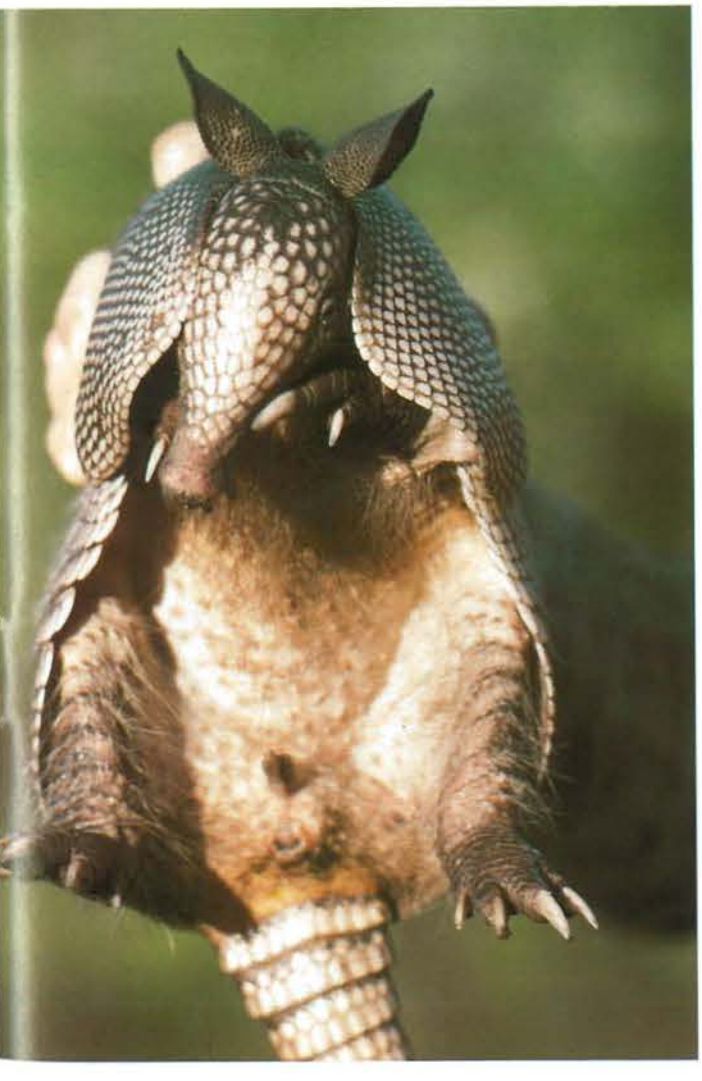
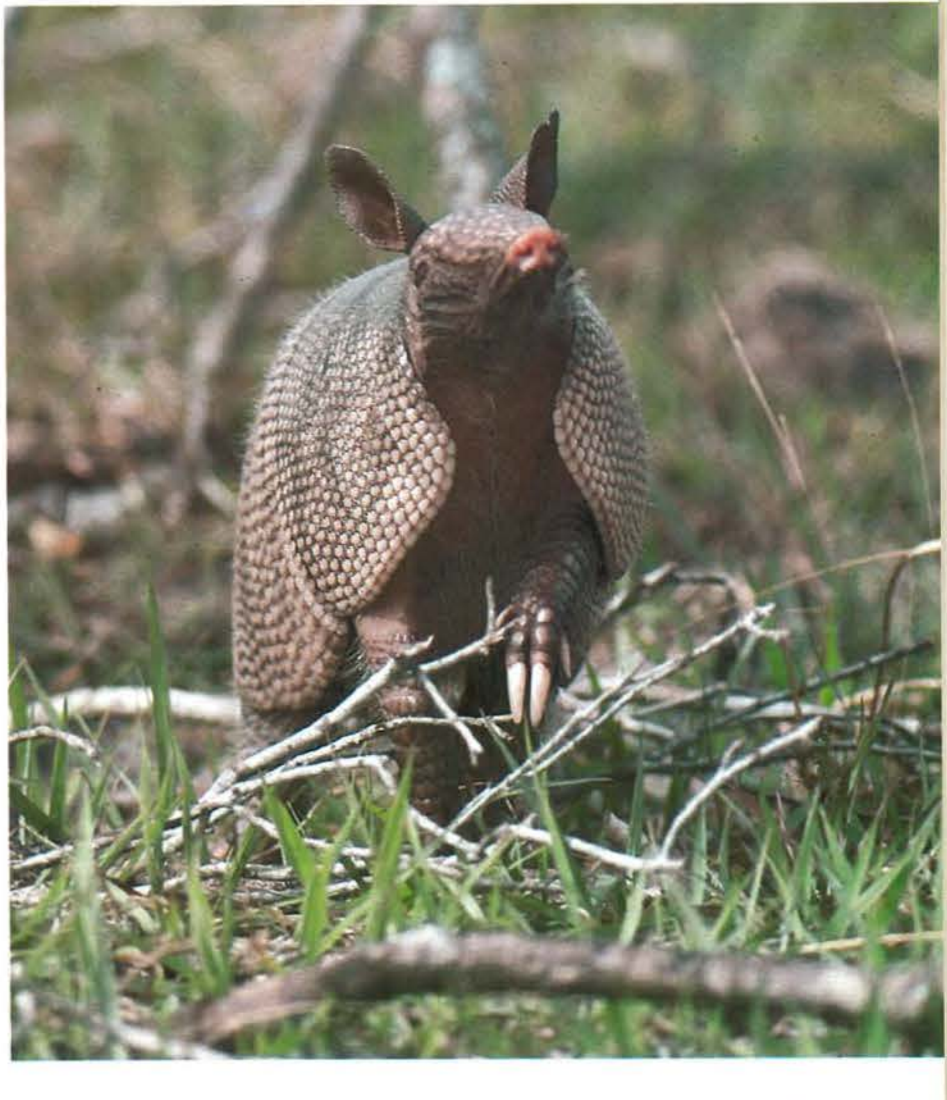
Photos by William A. Greer





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quail and turkey production have simultaneously suffered reduction. These dips are actually caused by a more complex environmental interaction and the increase of armadillos is only circumstantial, but they invariably get the blame for reduction in the quail and turkey populations.

For several years, field personnel with the Game and Fresh Water Fish Commission have been collecting armadillo stomachs to analyze foods of the species in Florida. Recently the results were compiled from an examination of 172 stomachs collected over the entire range of the animal in Florida. The most common item in the diet of the Florida armadillo was found to be larval and adult may beetles. Larval march flies and fungus gnats were also commonly eaten as were ants of several species, including the imported fire ant, various species of crickets, roaches and larval moths. Other main components of the armadillo's diet were found to be millipeds, centipeds, and earthworms.

Some surprises occurred in examining the 172 stomachs; one was full of baby cotton rats, many contained tree frogs, toads or skinks. Armadillos were also found to eat a good deal of vegetable matter, mainly blackberries, palmetto berries and various types of seeds.

From looking at the diet, the armadillo is not a nuisance animal at all. Rather it is a useful control on many species of insects regarded as pests. It is interesting that the foods of this animal, exotic to Florida, closely parallel what they eat in their native habitat.

In Florida, the armadillo is doing about what it does elsewhere in the United States and generally being misunderstood for it. ●

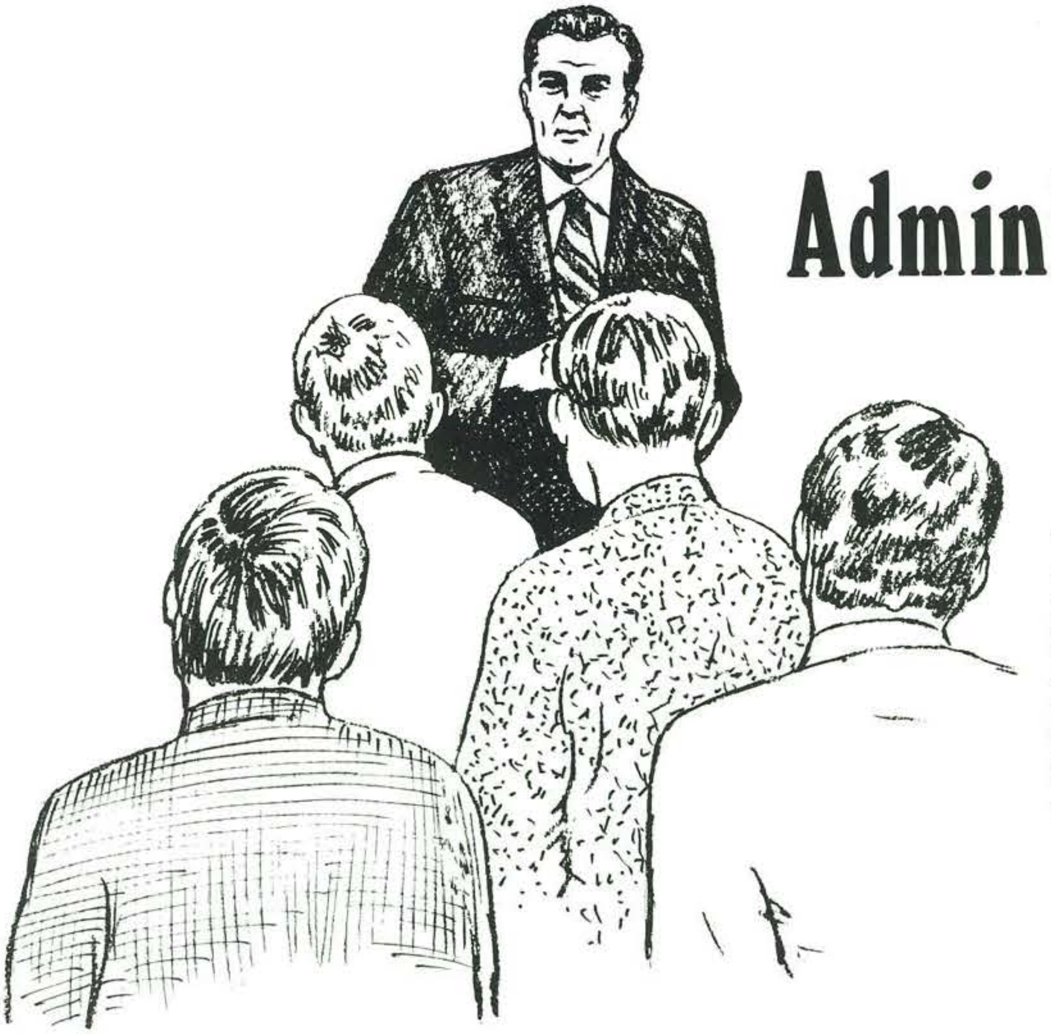
Photo by William A. Greer

Subject of considerable misunderstanding, the armadillo is actually an ally in the battle against the "bugs." Much of its excavation is done in pursuit of insects in various stages of development. Unfortunately, pastures and gardens sometimes come out on the short end when the enthusiastic bug hunter gets cranked up.

ANNUAL REPORT

JULY 1, 1976 - JUNE 30, 1977

Florida Game and Fresh Water Fish Commission



Administration

"LEADERSHIP INVOLVES REMEMBERING PAST MISTAKES, AN ANALYSIS OF TODAY'S PROBLEMS, AND A WELL–GROUNDED IMAGINATION IN VISUALIZING THE PROBLEMS OF THE FUTURE."

Stanley C. Allyn

DIRECTING THE WILDLIFE DOLLAR

"TELLING YOUR MONEY WHERE TO GO INSTEAD OF WONDERING WHERE IT WENT."

C.E.Hoover

THE UNITED STATES OF AMERICA
IN GOD WE TRUST
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CHARTING A COURSE FOR CONSERVATION

For the first thirty years after the Florida Game and Fresh Water Fish Commission became a constitutional agency, on January 1, 1943, it carried out its programs with revenue derived from the sale of hunting and fishing licenses. During the early years of the Commission, this was appropriate, as the programs of the agency were primarily directed to benefit hunters and fishermen. However, over the years, particularly during the past decade, the Commission has become increasingly involved in matters affecting and benefiting not only the hunter and fisherman but the general citizenry: protection, research and management of nongame species of wildlife; boating safety, civil emergencies and other general police actions; pollution control, and ecological systems; and development of a recreational program for the Everglades.

Realizing that these activities benefited the general public rather than exclusively hunters and fishermen, in 1973, for the first time, the Legislature appropriated $2,036,737 in general revenue funds to assist in the Commission's overall program. Subsequently, the 1974 Legislature appropriated $5,196,711 in general revenue funds to carry out the expanded responsibilities of the Commission. (Of this amount $1,735,164 was for capital outlay projects, primarily for development of recreational facilities in the Everglades.) The 1975 Legislature appropriated $3,534,200 for the same purpose. Finally, the 1976 Legislature appropriated $4,620,279 for statewide application of progressive conservation projects. These funds have been put to good use, as can be ascertained by a review of the various programs and accomplishments set forth in this report.

In general, the Commission accelerated its management of the state's wildlife and fresh water fisheries resources to insure optimum wildlife and fish populations for the recreational and aesthetic benefit of the public. Such management encompassed the promulgation of codes and regulations for the protection of the resource; enforcement of these codes and regulations and those provided by Florida statutes; habitat improvement; research directed toward solving resource problems; regulation and inspection of wildlife importation; regulation and inspection of wildlife exhibitors; control of aquatic vegetation; biological inspection and reporting of construction and development projects which could affect fish and wildlife resources and their habitat; acquisition and development of public recreation areas; and a conservation information and education program.

The Commission appreciates the support of the Legislature, the sportsmen, and other outdoor-oriented citizens of the state, and intends to justify that support.

Administrative Services

The Administrative Services Division, literally, has a hand in everything the Commission does. Starting with the formulation of the annual budget to collecting revenue and paying for supplies and personnel, continuing with accounting for all physical property, maintenance of facilities, to providing 24-hour communication throughout the state, this Division is involved. Activities of this Division include fiscal and accounting, property maintenance and inventory, publications and printing, purchasing of equipment, personnel management, communications, budget programming and planning, and general support services.

Program: PLANNING AND BUDGETING

In order for a state agency to operate from year to year it must project both revenues and expenditures a year in advance. This is accomplished through the Legislative budget process, both Operating and Fixed Capital Outlay. The budget documents submitted in October of each year outline the fiscal year which starts the following July.

Progress:

Fiscal 1978-79 will see the State of Florida return to a biennial budget, which is submitted every other year and outlines operations for two years instead of one. This will put greater emphasis on the planning aspect from the Commission side of the fence. It will require greater insight and foresight to plan activities extending almost three years from the time plans are first worked up. Accurate financial records are the basis for good planning. The use of online terminals connected directly to the computer at the Data Center will provide up-to-the-minute data for the historical expenditure records. The first biennial budget will be a test of the Commission staff's ability to accurately forecast long range needs, goals and objectives. The basis of this system was initiated during this year.

Program: FINANCE AND ACCOUNTING

The major function of Finance and Accounting is the accountability of state and federal funds available to the Commission.

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This function includes maintenance and control of the accounting system reflecting all receipts, expenditures and commitments of our agency. The Finance and Accounting office also is responsible for the license and permit activities of the Commission.

Progress:

The Departmental Accounting System, developed by the Auditor General's Office, has continued to be a useful tool in controlling the expenditures of the Commission's operating divisions. With the use of the computer printouts and a cash control ledger, we have continued to fund the Land Acquisition Trust Fund, replace equipment as needed, absorb normal expenses and still maintain a budget reserve.

Several key positions in the Fiscal office have been upgraded and an additional accountant was added to the staff. These changes have enabled us to develop new systems which provide even better accountability and internal control.

New procedures have been developed for the assignment and balancing of licenses sold by the tax collectors. These changes should result in a more efficient administration of the license and permit system. Members of our staff continue to conduct training sessions for the counties to assist them in improving their reports and to answer any questions relating to the sale of licenses.

We invested all surplus cash with the State Board of Administration and earned $59,638.37 on these investments.

Program: PROPERTY MAINTENANCE AND INVENTORY

Accountability is the primary task of the property office.

Progress:

A continuing update of files is providing a more accurate accounting and location of mobile and portable equipment.

Surplus and confiscated property sales for the year resulted in the disposition of 55 vehicles, 134 guns, 27 miscellaneous boats, motors and trailers for a combined total of $29,842.46 receipts.

Program: PURCHASE OF EQUIPMENT AND SUPPLIES

Striving to achieve the greatest return for each dollar spent is the primary goal of purchasing.

Progress:

Controls on expenditures and prompt attention to financial obligations are vital to the overall operations.

A total of 9,040 purchase orders, 216 formal and legal bids along with 236 mobile equipment requests were processed.

Program: PERSONNEL

This operation involves the employment and the processing of all pay, insurance and leave records for all Commission employees in accordance with rules of the state, and with the screening and processing of applicants seeking Commission employment.

Progress:

As a result of the Commission reorganization as a department, new organizational charts and job descriptions for each of the 671 positions were prepared and submitted to the Department of Administration. In addition to routine pay and other personnel functions, approximately 150 announcements of job openings were published and distributed, and more than 800 job applications were reviewed and evaluated. In addition, the drafting, certification and filing of all Commission rules and regulations as required by the Administrative Procedures Act were performed by this office.

THE CORNERSTONE OF CONSERVATION

> **"NEVER HAS THE WORLD OWED SO MUCH TO SO FEW."**
>
> **Winston Churchill**

The Law Enforcement Division is charged with the responsibility of protecting Florida's wildlife, fresh water aquatic life and the environment. This is accomplished by preventive patrol of lands and woods and the apprehension and arrest of persons violating laws relating to hunting, fishing, littering; the sale, use, possession and importation of wild animals and fish; enforcement of environmental and boating safety laws; assistance to other public agencies; maintenance of public order during natural disasters and civil disorders; undercover investigations and training of personnel. The Division also has statewide responsibility for all search and rescue operations under Florida's natural disaster plan. Certain landowners are afforded additional preventive patrol in order to maintain over five million acres of lands open to public hunting and recreation.

Program: UNIFORM WILDLIFE LAW ENFORCEMENT

Florida Wildlife Officers are responsible for uniformed patrol of our vast water and land areas 24-hours a day, seven days a week in order to enforce wildlife and environmental laws. Due to their "peace officer" status, Wildlife Officers provide a unique degree of general law enforcement protection to wilderness and rural areas while on wildlife patrol.

Progress:

This highly trained select force has effected approximately 9000 arrests during the past fiscal year covering a broad spectrum of violations. Although the majority of cases were wildlife and environmentally related, also included were arrests for traffic, drugs, boating safety, arson, burglary, grand larceny, cattle rustling, auto theft and rape. Wildlife Officers also devote a great deal of their enforcement efforts toward "non-game" areas such as "endangered" and "threatened" species protection and bird rookery patrol.

Specialized equipment is necessitated for patrol of otherwise inaccessible wilderness areas, therefore, airboats, halftrack, and four-wheel drive vehicles are utilized, as well as conventional patrol sedans.

In order to achieve maximum effectiveness, experience has shown that a ratio of "one officer, per county, per shift" is necessitated. Through legislative funding this year we have attained 61% of this goal, thus approximately 20 hours of a 24-hour period can be covered. However, in order to properly respond to the public around the clock, three eight hour shifts are necessary. This goal cannot be realized without the "one officer, per county, per shift" complement.

Program: AVIATION

The aviation program of the Commission is responsible for providing aerial surveillance and patrol support for uniformed law enforcement officers utilizing both fixed-wing aircraft and a helicopter.

Progress:

The aviation program is composed of five pilots utilizing one helicopter, one twin-engine aircraft and three single-engine aircraft which is approaching the goal of one fixed-wing patrol aircraft for each of the five regions plus the helicopter for special use in remote areas of the Everglades. In addition to providing aerial support and patrol for the uniform force, the aircraft also participate in search and rescue services and wildlife and environmental surveys.

Program: WILDLIFE TRAINING

The Training operation provides the Law Enforcement Division with program evaluation, curriculum development, research, seminars, workshops, and publications. It is an integral part of an efficient and effective organization, especially in a law enforcement agency where officers must be kept abreast of a constantly changing society and its laws.

Progress:

During the fiscal year, 21,600 manhours were spent in seminars, workshops, and recruit training. A criminal law seminar, defensive tactics training and precision and pursuit driving course was instructed to all law enforcement personnel on a statewide in-service basis. An extensive 160-hour supervisory management seminar was held for all law enforcement supervisors. Additional workshops, training bulletins and in-service training packages were utilized for training of Commission employees.

Program: WILDLIFE INSPECTIONS

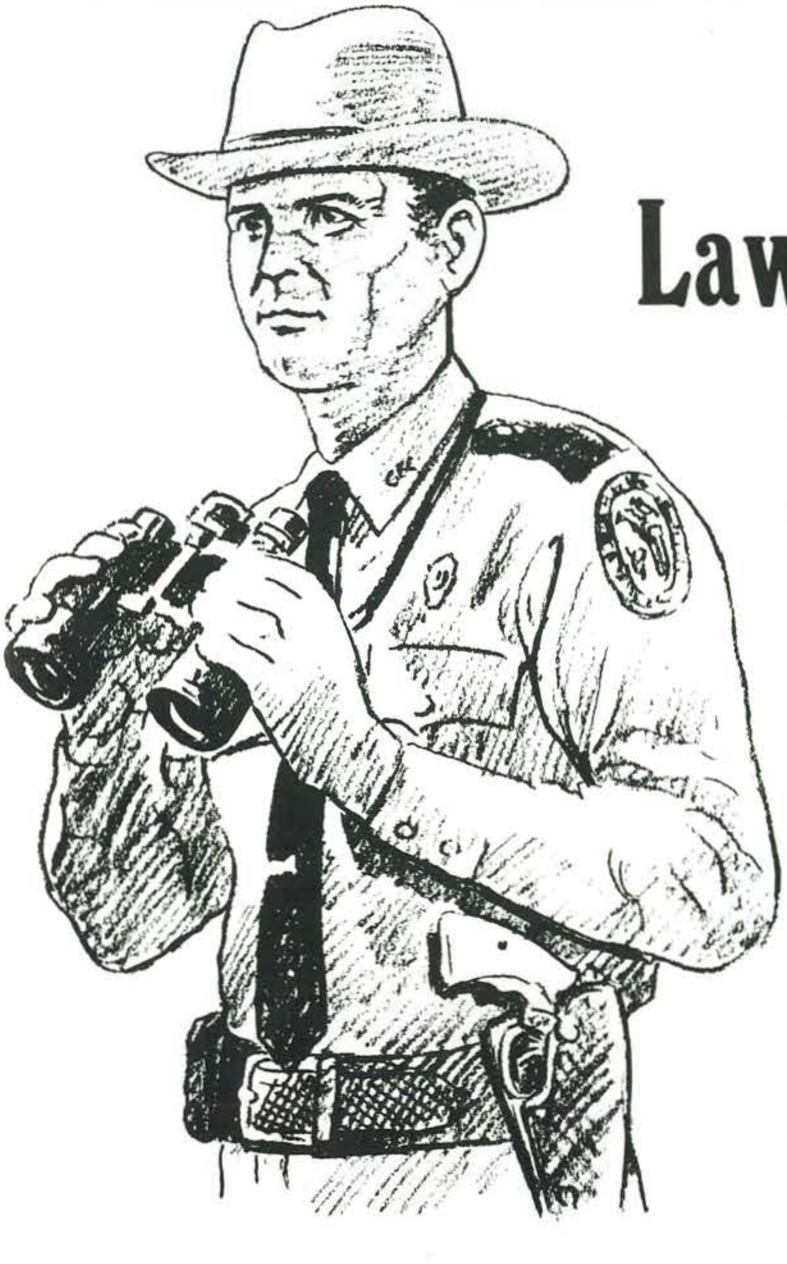
The Wildlife Inspectors are Florida's "first line of defense" against the illegal importation, possession and the release of potentially dangerous foreign wildlife and fish. These specialized enforcement officers are charged with insuring compliance with the myriad of technical state and federal laws governing the vast wildlife trade and wild animal attractions.

Progress:

Wildlife Inspectors work with over 1,000 major wildlife attractions and private animal keepers in a cooperative effort to continually upgrade the quality of life for captive wildlife. Special emphasis is placed on the curtailment of commercialization of endangered and threatened species, with nearly 1,000 man hours being devoted to this enforcement effort during 1977. Protection of rookery areas is also of prime concern as attested by the apprehension and arrests of five Panamanian crewmen who had illegally gathered 155 Laughing Gull and Black Skimmer eggs. The crewmen were subsequently fined a total of $1,000 in federal court.

With over 35 million specimens of wildlife and fish imported annually through Miami and Tampa ports of entry, coupled with the additional 60 million ornamental fish produced in Florida, the potential dangers in maintaining Florida's environmental integrity are great. During 1977, Wildlife Inspectors seized nearly 1,000 exotic tropical fishes and over 4,000 specimens of wildlife that were illegally imported, taken or possessed.

This specialized operation will continue to play a vital role in the enforcement of wildlife laws providing a substantial degree of protection to our native fish and wildlife resources.



Law Enforcement

Program: UNDERCOVER INVESTIGATIONS

This specialized team of plainclothes officers is designed to assist uniformed wildlife officers in coping with organized market hunting and large scale commercialization by wildlife profiteers. Being free from a shift schedule, investigators provide the wildlife enforcement program with capabilities for conducting lengthy and difficult investigations. As the first state to initiate a plain clothes enforcement program, Florida has served as a model for the southeast.

Progress:

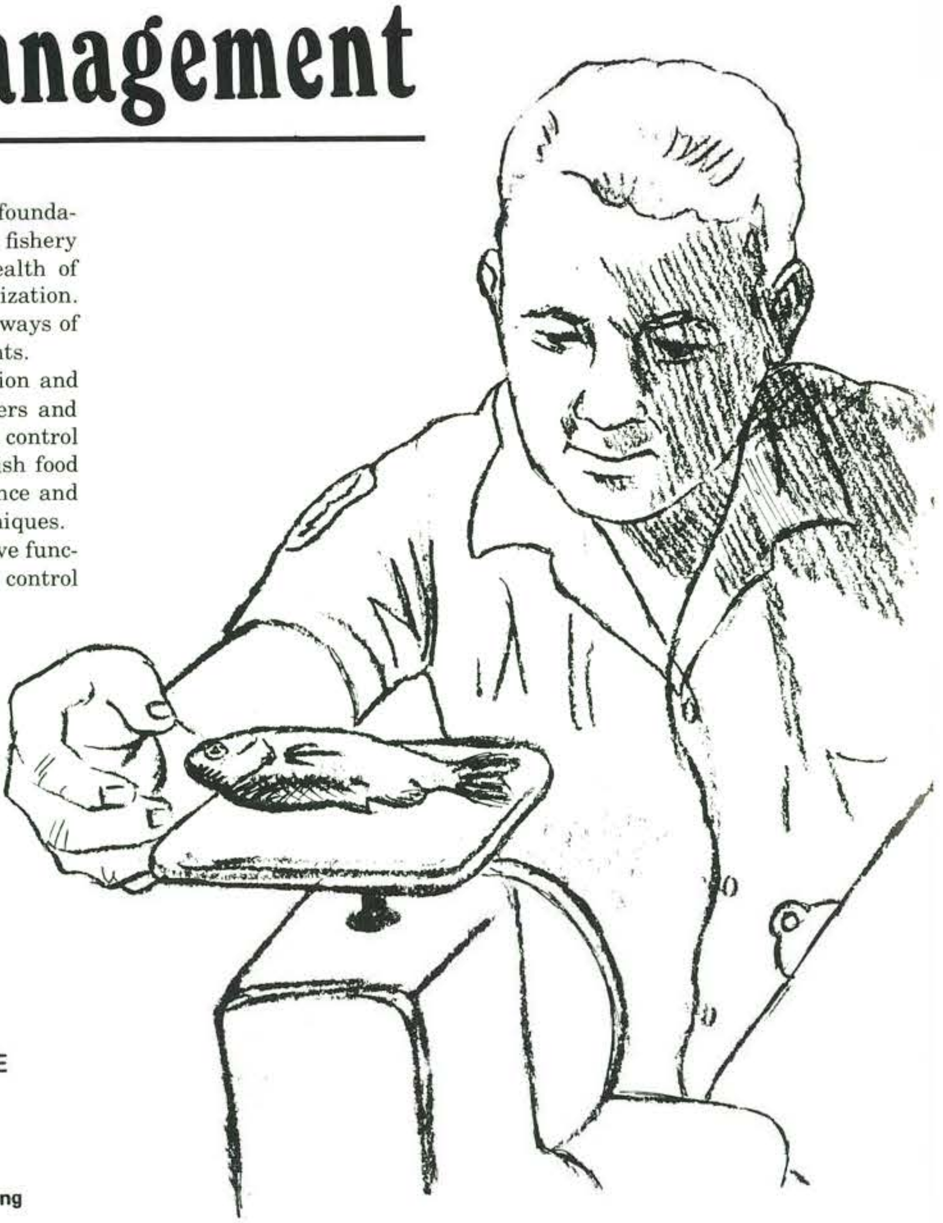
This small group of plain clothes investigators has been responsible for "busting" groups of profit motivated wildlife violators in every Region of the state. This fiscal year, undercover investigations resulted in the seizure of more than 2,500 feet of alligator hides in a single investigation which began in Hardee County and spanned three Regions. Another case in St. Johns and Duval Counties resulted in the arrest of five suspects on charges relating to market hunting of deer and illegally possessing black bear. Several defendants in both cases were sentenced to serve 30 days in jail in addition to fines of up to $1,000 and lengthy probations. Local courts, prosecutors and sportsmen have lauded the professional enforcement tactics of this operations that currently maintains a jury trial conviction record of 100%.

Fisheries Management

A broad spectrum of applied and basic research is the foundation for sound management of Florida's freshwater fishery resources. It is a never-ending challenge, with our wealth of lakes and streams and the changes brought on by urbanization. Thus, the Division of Fisheries continually searches for ways of improving fishing and enhancing our aquatic environments.

Sport fishing is improved in many ways: the renovation and restocking of lakes and ponds; the management of rivers and streams; identification, documentation, management and control of exotic species; creel census; and studies of fish and fish food organisms; life history studies; environmental surveillance and developmental research for better fish management techniques.

This Division is also responsible for those administrative functions related to freshwater fisheries and aquatic weed control programs.



"AN EMPLOYMENT FOR MY IDLE TIME, WHICH IS THEN NOT IDLY SPENT."

Sir Henry Wotton

"THERE IS CERTAINLY SOMETHING IN FISHING THAT TENDS TO PRODUCE A GENTLENESS OF SPIRIT, A PURE SERENITY OF MIND."

Washington Irving

Program: REGIONAL FISH MANAGEMENT

Regional fish management projects involve the application of research findings. They are the programs readily identified by the general public, and include management of public waters for better fishing, commercial harvest programs on under-utilized fishery resources, construction of fish attractors, lake drawdowns and stocking sport fish such as the striped bass or sunshine bass. Additionally, considerable effort is devoted to consultation with fishing groups, clubs, and owners of private lakes.

Progress:

Requests for restocking lakes and ponds were evaluated, renovations were coordinated, fish kills were investigated, and, where feasible, action implemented to correct the problem. Numerous fish populations were sampled and action initiated to improve fishing. Creel surveys were conducted and fishing maps were produced on popular fishing lakes.

Since many environmental matters have a direct impact on fishery resources, a surveillance was maintained on aquatic systems. Assistance was extended to pollution abatement programs as well as development and planning projects.

A statistical survey of fishermen was conducted with some interesting results. For example, (1) bass club members do not represent the opinion of the average fisherman, (2) 53% of Florida's fishermen prefer to fish for bass, (3) fishermen preferred resource management to be guided by scientific research rather than public opinion and the majority felt that emphasis should be placed on intensive fish management rather than just stocking programs alone.

Commission facilities such as boat ramps, fishing piers and dams were inspected and repaired where needed. Fishing programs were presented to various clubs and groups.

Program: LAKE OKEECHOBEE

Fish population monitoring was continued along with the development of the Lake Okeechobee Fisheries Utilization Plan designed to better utilize and manage the fishery resources of this great lake.

Progress:

Early program success is evidenced by the increased average size of black crappie. This accelerated growth may be accredited to the removal of 4,616,840 pounds of panfish; 1,620,092 pounds of catfish and 1,999,089 pounds of rough fish. Considerable numbers of largemouth bass that are captured in the commercial nets are being tagged and released in an attempt to define movements and locate open water bass habitat. Data on growth, migration and survival can also be determined from the tagging program.

Program: FISH HATCHERIES

The stocking of fish in new lakes or corrective stocking have long been important tools of the fisheries biologist. The Commission operates two hatcheries. Fingerlings from these two facilities are used for stocking selected waters throughout the state.

Progress:

Fish from the Commission's hatcheries were distributed to 455 locations and stocked 110,928 acres of water. Fish were also shipped to ten research stations or other hatcheries during the past year. Total fish production consisted of 3,925,000 fry; 2,051,037 fingerlings; 19,345 sub-adults and 757 adults.

Improvement is under way at Richloam hatchery. This involves resloping banks and establishing a low maintenance grass cover. The new hatchery building at Blackwater Hatchery was completed.

Program: NORTHWEST FLORIDA STREAM PROJECT

This program was developed to study the fisheries habitat and provide a means of improving fishing in northwestern Florida rivers.

Progress:

Studies on the Blackwater River indicated that a suitable habitat was available for the introduction of redbreast sunfish. To begin the research, 594,000 redbreast were stocked, including 500 adults of the species, in the Blackwater River. Fingerling stockings have been successful and the stocked adults have spawned. An ecological survey of the Escambia River is being made and the feasibility of stocking striped bass or sunshine bass is being investigated. Preliminary fish samples were taken from the Yellow River system.

APPLYING SOUND RESEARCH THROUGH PROGRESSIVE MANAGEMENT FOR THE FUTURE OF FISHING

Program: LAKE JACKSON STUDY

Lake Jackson, the popular big bass lake located near Florida's capital city, has suffered from the effects of urbanization and highway construction in recent years. This program is designed to document the changes that have occurred and determine corrective measures or improvement programs for resource enhancement.

Progress:

The Lake Jackson studies have three major areas of concern. These are: bass populations, hydrilla growth and spread, and the impact of urbanization. The bass population is currently characterized by a high percentage of 9-15 inch bass and relatively low numbers of larger fish. Hydrilla is being chemically controlled so that it does not interfere with fishing.

Turbid water entering Lake Jackson from the urban watershed has decreased significantly due mainly to regulations directed toward erosion control and a decrease in construction activities in the area of the lake. Plans for construction of a settling pond and marsh ecosystem on Megginnis Arm have been completed. This should further reduce the impact of urbanization.

Program: LAKE TALQUIN STUDY

Lake Talquin, Florida's largest manmade impoundment, located west of Tallahassee, continues to be a popular fishing lake. The objective of this study is to monitor the fish population and maintain sport fishing for both freshwater game fish and striped bass.

Progress:

Lake Talquin was stocked again this year with approximately 100,000 striped bass fingerlings. The adult striped bass population in the lake has proven to be the major source of brood fish for the striper/sunshine bass program. A successful fishery for striped bass has been created below the Jackson Bluff Dam at Lake Talquin State Park with stripers up to 24 pounds being taken. Fish population samples indicate an excellent sport fish population.

Program: GRASS CARP RESEARCH

The grass carp or white amur was imported into Florida as a control agent for aquatic vegetation. No one can dispute the ability of the fish to devour large quantities of vegetation; however, little is known of the effects on other aquatic life. Lakes Deer Point, Conway, Wales, and Baldwin were stocked with grass carp and are being used as research sites to determine the effects on aquatic life.

Progress:

No significant change in water quality, invertebrates or sport fish were detected during a year's study of Deer Point Lake. However aquatic plants increased from 36% in 1976 to 42% in 1977, indicating the fish may be unable to control the lake's vegetation. Lake Conway was stocked with 7,900 monosex grass carp following more than a year's collection of baseline data. Monitoring will continue to determine any significant changes due to the stocking.

At Lake Baldwin a stocking rate of 25 grass carp/acre failed to control hydrilla over a two year period. Development of a potential capture and removal technique for grass carp was one of the highlights of the Lake Baldwin project. Impact on waterfowl due to changes in habitat associated with grass carp stocking was determined at Lake Wales.

Program: OKLAWAHA BASIN FISHERIES RESEARCH

A research program designed to investigate and document environmental changes affecting habitat quality and fisheries of the Oklawaha River Basin.

Progress:

An extreme drawdown of Lake Carlton was accomplished this year. Beginning March 1, 1977, 1.2 billion gallons of water were pumped out of Carlton which exposed 85% of the bottom. Refill was slowed by drought; however, the habitat improvement has resulted in an increase in the number of forage fish. The movement and distribution of non-utilized panfish in Lake Griffin was investigated.

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Program: **ARTIFICIAL FISH ATTRACTORS**

A program designed to create effective artificial cover and food accumulator to attract and concentrate fish for better fishing.

Progress:

Utilizing tree tops, brush and old tires, fish attractors were installed in lakes throughout the state. The catch rate of fish increased dramatically at the attractor locations and the Division of Fisheries established a 5-year program designed to construct 150 attractors in selected public lakes.

Attractors will be clearly marked with buoys bearing the Commission decal. The installations are particularly effective in concentrating numbers of bass, black crappie, and bream.

Program: **LARGEMOUTH BASS RESEARCH**

A research program designed to document facts leading to progressive management programs for largemouth bass.

Progress:

The role that vegetative cover plays in bass spawning success in crowded sunfish populations was documented in research ponds at the Richloam hatchery. In two ponds stocked with identical numbers of bass and sunfish, spawning occurred in the pond with vegetation cover. Spawning did not occur in the pond without vegetative cover. The Trout Lake bass stocking study continued. Fingerlings tagged with a magnetic wire tag inserted in cartilage in the head have survived in the lake population for over two years. Radio tagging and tracking equipment is now being used in our bass research. This equipment allows biologists to track the movements and behavior of bass up to a distance of one mile. Life expectancy of the transmitter is approximately three months. From this information a better understanding of bass habits can be determined.

Program: **SPORT FISH INTRODUCTIONS**

This program is designed to improve fishing through the introduction of new game fish species. Additionally, fishing potential in certain lakes may be enhanced by some degree of biological control on forage fish such as shad. The fishes now being researched are snook and sunshine bass.

Progress:

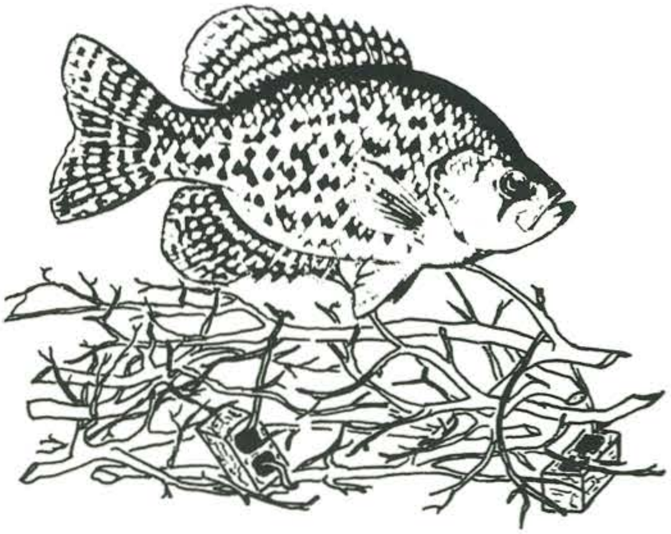
Artificial propagation of snook produced 400 fingerlings this year. Although a small beginning, this accomplishment was a major breakthrough in scientific technology. Pioneer Park Lake was stocked with 20 fingerlings. Lake Bonny in Polk County received 200 fingerlings. This was the first time snook had been artificially cultured and reared anywhere in the world.

The sunshine bass phase of the program produced 1 million fingerlings for stocking in 1977. Over 100,000 acres of public lakes were stocked to maintain the recently popular fisheries for sunshine bass.

Program: **ST. JOHNS RIVER FISHERY PROJECT**

A continuing research program designed to document factors affecting the fish and habitat of the St. Johns River.

Progress:



Black crappie and a brush bundle fish attractor

River water quality was monitored at 31 stations from Green Cove Springs to Lake Helen Blazes. No significant changes were detected when compared with the previous year's data. Quantitative zooplankton samples were collected and analyzed throughout the river. Fish population surveys were conducted and both native freshwater and saltwater fishes were taken in the samples. A survey was conducted to determine if a significant number of game fish were captured in hoop nets and wire traps. The results showed the game fish catch to be insignificant.

Program: **EXOTIC FISH RESEARCH**

In 1971, an exotic fish research station was established at Florida Atlantic University to evaluate the ecological significance of non-native fish. Some 25 foreign species are now well established in Florida. This research program has been designed to (1) evaluate the effects of non-native fish, (2) identify specific environmental limiting factors, e.g. temperature, and (3) to develop and coordinate management practices aimed at limiting the biological effects of exotic fishes in Florida.

Progress:

A 1,000 gallon research system was designed, constructed and put into operation for identifying lethal temperatures for selected non-native fishes. Evaluations of walking catfish and blue tilapia on bass and bluegill were initiated. A thorough review of the known status of the blue tilapia in Florida was completed and new field studies planned. Preliminary investigations into the laboratory rearing of snook were completed. Snook reared in these studies have been stocked into a tilapia infested lake to determine how well they can utilize and control the tilapia. Plans for permanent facility improvements at the Research Center were finalized and the construction begun.

A year's work was devoted to tilapia research. The boundaries of the exotic's infestation were defined. However, the tilapia is still expanding its range. It has been found in both the St. Johns and Kissimmee River drainages. There was some commercial usage of the tilapia as 850,000 pounds were harvested and marketed.

Program: **WATER LEVEL MANIPULATION**

Natural fluctuation of water levels is a major force in maintaining water quality and sport fish populations. Florida's lakes and streams were once subject to drastic water changes, however periods of flood or drought brought hardships to the human populations and water levels were stabilized. This program was designed to return designated bodies of water to periodic controlled water level fluctuation.

Progress:

Lake Carlton in the Oklawaha chain of lakes and Lake Kissimmee located south of Orlando have both been drawn down during the past year. Information gathered on both lakes indicates that significant progress was made in tying up nutrients and producing desirable emergent vegetation. Plans for the coming year include feasibility studies on a number of stabilized bodies of water and the placing of Lake Iamonia, located near Tallahassee, in the active drawdown phase.

Program: **ENDANGERED SPECIES PROGRAM**

This program will identify threatened or endangered species of fish and determine life histories and distribution of these species. Future aims of the program will be to manage these species, hopefully preventing extinction.

Program: **STATEWIDE LAKE IMPROVEMENT**

This new program will provide coordination between the Commission and other interests for the improvement of fishing in the waters of the state. Such projects as habitat improvement and water level manipulation will come under the purview of this program.

Program: **WATER HYACINTH CONTROL**

The majority of operational control effort is devoted to chemical spraying in an attempt to clear out and maintain control in problem areas. A spray plane is used for aerial spraying of extensive infestations. New polymer metering units are presently being fitted to various airboats in highly populated areas to minimize spray drift damage. Other new types of application equipment have also been installed to update present equipment.

Progress:

The program has continued to maintain hyacinth populations at acceptable levels under an approach of surveillance and control of small, potentially explosive growths that would expand into major problems if left unchecked. Over 36,000 acres of hyacinths were treated in 579 bodies of water. This was carried out by an operational force of 19 airboat crews and the spray plane strategically stationed around the state in known problem areas.

Hyacinth jams typically form in some rivers during the rainy season. These jams are broken up and sprayed to assure as little inconvenience and damage as possible in the blockage of navigable waters. The program also includes removal of obstructions that hold the free floating mats and ultimately result in the formation of larger jams.

The release of hyacinth weevils has been continued in hopes of achieving some degree of control through the use of this biological means.

Program: **HYDRILLA CONTROL**

Since its introduction in 1960, hydrilla has spread throughout Florida. In a few regions of the state, hydrilla has surpassed water hyacinth in total number of areas infested. The intercounty vegetation survey indicated that approximately 85,000 acres of hydrilla were present in these public bodies of water. Efforts to control hydrilla have been complicated by relatively high herbicide costs and the tremendous reproductive and growth capabilities of the plant.

Progress:

To aid the fisherman in the more heavily infested lakes, a program was implemented to improve fishing access. Boat trails and fishing holes were provided in Orange Lake through herbicide treatment. A special mechanical harvesting program was also conducted by the U.S. Corps of Engineers that complemented the chemical treatment in the lake.

Spot treatment programs were developed to curb the spread of hydrilla when new infestations were first encountered. These programs proved to be highly successful in some lakes.

Program: **AQUATIC PLANT CONTROL PERMIT**

In 1972, an aquatic plant control permit was developed to govern increased weed control activities throughout the state. The permit is designed to monitor all activities in the realm of aquatic plant management.

Progress:

After five years technique advancement and increased herbicide spraying warranted a permitting system to govern use of these toxic materials. The new rule is in effect and has given firm direction to the entire permitting program. During this report period, 530 permits were issued statewide for weed control.

The new permitting program was developed to allow inspectors to monitor the ever increasing work load. Land developments, increased demand for open water, coupled with the growing public awareness of aquatic weed problems will increase the permitting and monitoring program in the coming years.

Program: **AQUATIC VEGETATIONS SURVEY**

An inter-county survey is conducted annually by the aquatic botanists and other personnel to determine the extent of problem aquatic plant species statewide. This information serves as the basis for program development in weed control.

Progress:

Statewide information was gathered by aerial, water and ground surveillance and consultation with other agencies and individuals involved in aquatic plant management and other closely related fields. From these data it was determined that water hyacinths were generally under maintenance control and additional areas requiring chemical spraying. Eurasian watermilfoil was found to be a localized problem in a few near-coastal regions. These areas were specifically defined and acreage estimates obtained. Hydrilla, however, showed a steady increase in its coverage, in spite of all efforts at control and containment.

Program: **AQUATIC WEED EXTENSION SERVICE**

Private lake owners with problem aquatic vegetation look to the Commission for assistance in managing their lakes for recreational use.

Progress:

Aquatic botanists stationed in five field offices provide lake owners with information on methods of controlling aquatic vegetation. Individual recommendations, based on the nature and extent of the problem, consist of chemical, dewatering or mechanical removal information.

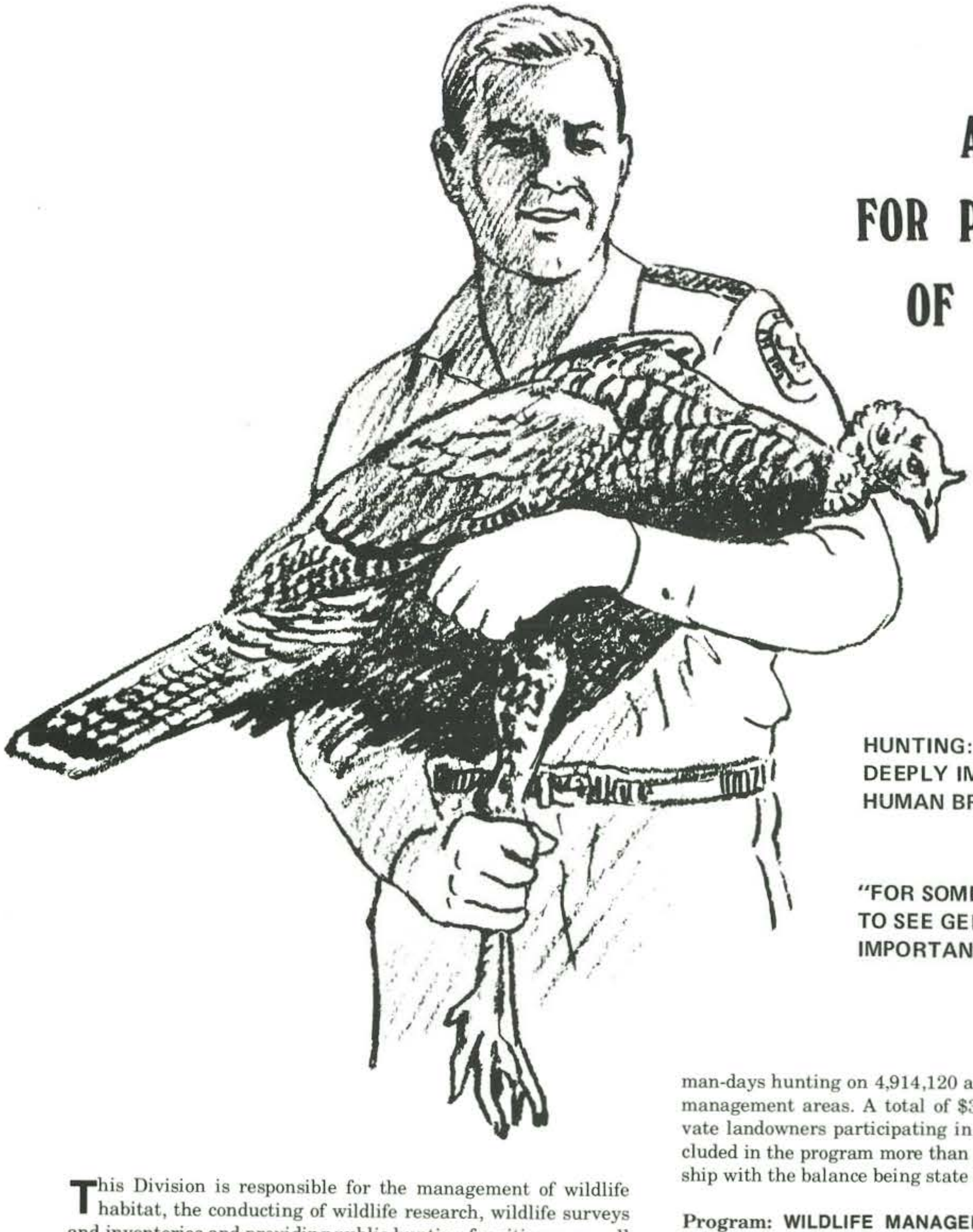
Program: **AQUATIC WEED CONTROL RESEARCH**

The aquatic weed control research is designed to complement the operations section. It involves evaluation of past and present control methods, development of new technology and ecological studies of aquatic plants.

Progress:

Three biologists stationed at the fisheries research laboratory are conducting research on the following topics: the evaluation of spray additives for operational feasibility in hyacinth control; evaluation of new compounds for possible hydrilla control; evaluation of time applications with currently registered herbicides to determine if better control is given at certain periods of the year; determine the effectiveness of the registered compounds for hydrilla control; monitoring the effects of water level fluctuations on aquatic vegetation; and developing techniques of harvesting and planting of various desirable aquatic plants to enhance the fishery of lakes.

A FOUNDATION FOR PERPETUATION OF ALL WILDLIFE



HUNTING: "A PASSION . . . DEEPLY IMPLANTED IN THE HUMAN BREAST."

Charles Dickens

"FOR SOME, THE OPPORTUNITY TO SEE GEESE IS MORE IMPORTANT THAN TELEVISION."

Aldo Leopold

This Division is responsible for the management of wildlife habitat, the conducting of wildlife research, wildlife surveys and inventories and providing public hunting for citizens as well as support for and preservation of all non-game species in Florida. The Division administers and directs the activities of research and management as well as the acquisition, development, operation and maintenance of wildlife-related recreational areas and facilities. Additional activities include research on endangered wildlife species and other non-game species and support of those wildlife species which are of interest to both the hunter and the non-hunter.

Program: PUBLIC HUNTING

As an on-going program to provide public hunting, the Division carries out a land lease program to provide protection and habitat improvement in cooperation with landowners in exchange for public hunting rights. To supplement the program, the legislature appropriates funds to be distributed to the landowners on a pro rata basis according to the number of hunters utilizing the designated management areas.

Progress:

During 1976-77, a total of 282,291 hunters spent 1,674,298 man-days hunting on 4,914,120 acres included in the 45 wildlife management areas. A total of $300,000 was distributed to private landowners participating in the program. Of the lands included in the program more than one-third are in private ownership with the balance being state and federal lands.

Program: WILDLIFE MANAGEMENT AREA MAINTENANCE AND DEVELOPMENT

The Division currently has responsibility for nearly five million acres of land in 45 wildlife management areas, providing technical assistance to landowners and conducting management studies to improve wildlife.

Progress:

To carry out these responsibilities, a total of 11 biologists, 5 supervisors and 24 wildlife management specialists provide the expertise and manpower with the majority of time and effort being directed to the maintenance, development and operation of the wildlife management areas.

With the cooperation of the U.S. National Park Service, 110,000 acres of land in the Big Cypress National Preserve were open to public hunting. Field trials and one fox hunt were conducted on the Blackwater Field Trial Area in northwest Florida. Two hundred Canada geese were released in the continuing program to establish a non-migratory goose population. A sharp rise in beaver complaints was evident throughout the year in northwest Florida, placing an additional workload on technical personnel.

Wildlife Management

The annual deer trapping and relocation program resulted in the relocation of 107 deer from Cape Kennedy and 58 deer from the Joe Budd WMA. A hog trapping program on Merritt Island Refuge produced 157 hogs, 78 of which were released on Richloam and 79 on Guana River WMA. Hog trapping from Myakka State Park produced 68 hogs for the J. W. Corbett WMA, 39 for Three Lakes and 17 for Bull Creek.

Habitat management work accomplished during the year involved control burning of 175,350 acres, the planting of 24,800 oak seedlings, and 1,133 acres of annual forage food plots. In addition, a total of 205 acres were planted for dove fields to provide public hunting. Other activities included the maintenance and improvement of 30 miles of access roads, operation of check stations, maintenance of camp sites on 17 areas and the continuing repairs and erection of signs on management areas. Waterfowl impoundments located on the Aucilla, Guana River, and Avon Park areas were maintained and managed. On the Webb WMA quail feeders were maintained to improve the resident quail population.

Technical guidance and assistance was provided to landowners from approximately 375 requests received for assistance in developing wildlife management plans, wildlife food plantings, plans for the censusing of populations and for the harvest and control of nuisance wildlife.

The abomasal parasite sampling project continued throughout the year. Stomach samples were collected from 107 hunter-harvested deer on 19 wildlife management areas and a scientific count of parasites made. Samples were grouped with average parasite counts calculated for each area. In addition, the relationship of the deer herd to the carrying capacity of its habitat was established for each area. The study has developed a correlation between the average parasite count for an area and the deer population's status for that area.

During the year, 13 wildlife management specialists were sent to junior colleges in the vicinity of their residences to obtain Police Standards training. These specialists will augment the Law Enforcement Division's activities on wildlife management areas during the regular hunting season.

Program: WILDLIFE RESEARCH

Progress:

On February 17, 1977 the Wildlife Research Laboratory at Gainesville was officially dedicated. This modern facility was constructed in cooperation with funding from the Pittman-Robertson Federal Aid in Wildlife Restoration Program, in cooperation with the Fish and Wildlife Service, U.S. Department of the Interior. The lab is located on the northern edge of the Paynes Prairie State Preserve.

Program: HUNTER SURVEY

The hunter surveys are statistically developed mail-out surveys sent to hunters in the state to provide facts and figures as to the number of hunters and their success on public hunting areas.

Progress:

Information derived from the return of the questionnaires provides the basis for determining the hunter harvest success of all species during the year.

The management area survey provides facts and figures as to the number of hunters utilizing wildlife management areas and their success on those areas. For each wildlife management area the number of hunters, man-days of hunting pressure, and harvest for ten different species is determined.

Information received from these hunter surveys provides us with the information of hunter success throughout the state. The following is a chart showing the past few years comparison of hunter harvests.

HUNTER HARVEST

	1974-75	1975-76	1976-77
DEER	54,200	54,400	60,800
TURKEY	23,400	17,300	12,300
BEAR	9	12	15
WILD HOG	36,200	39,600	77,530
QUAIL	1,433,700	1,783,500	1,135,700
SQUIRREL	1,201,900	1,012,500	918,200
DUCKS	380,800	434,700	427,170
DOVE	2,368,300	2,740,600	3,387,700
SNIPE	183,500	213,000	186,900

Program: LAND ACQUISITION

From each ten dollar wildlife management area stamp sold, the sum of three dollars is set aside for the purchase of lands for public hunting, fishing and other outdoor recreational uses.

Progress:

During this year, funds set aside for land acquisition were utilized to acquire the Punta Gorda Isles (118.8 acres), the Vixler (80 acres), and the Spahn (15 acres) tracts on the Cecil M. Webb Wildlife Management Area. An additional segment of the Joe Budd WMA (160 acres) was also acquired. The Commission will continue to acquire lands for public hunting as they become available, meet the requirements for wildlife purposes and are offered to the Commission at the appraised market value.

Program: ALLIGATOR MANAGEMENT

The alligator, once endangered, has made a remarkable recovery since it was placed under full federal protection. Last year's report estimated that 500,000 alligators may inhabit the state today. Also in that year, the Commission received between 8,000 and 10,000 alligator complaints. The established program of capturing and transplanting 'gators has become ineffective as all suitable areas for transplanting are now approaching full capacity and the number of 'gators in need of being moved has increased to near impossible proportions.

Progress:

Early in the year a pilot program for harvest of problem alligators was implemented by the Commission. The program involved contracting with six professional trappers to operate under specific direction of research biologists in the northeast portion of the state. Problem alligators were investigated and if

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action was determined to be necessary the contractor was assigned the task of removing the specific 'gator. A strict control program was established for disposition of both the carcass and the hide. All hides were stored at the wildlife laboratory. The trapper was instructed in the procedures and requested to provide biological information from the dead animal. By the end of the fiscal year the program has proceeded on schedule.

Program: QUOTA HUNT SYSTEM

The quota hunt system was designed two years ago to improve the quality of public hunting and to spread out the wildlife harvest over a longer period of time. Earlier evidence had shown that most areas were experiencing extremely heavy hunting pressure during the first two weekends of the hunting season.

Progress:

Quotas were continued on the forty-five wildlife management areas to regulate the number of hunters during the first nine days of the season. Again, sportsmen were required to obtain a free permit on a first-come, first-served basis for the area of their choice. Quotas during this second year of the program were continued as derived for last year's hunt. Again, the response from the public was overwhelmingly in favor of continuing the program. This year a separate permit application form was printed for use in obtaining permits for the special hunts, that is, primitive weapon hunts (archery and muzzleloader). A total of 61,123 permits were issued during the 1976-77 season. A special post-season spring gobbler hunt was conducted on the Lykes Brothers Fisheating Creek Wildlife Management Area.

Program: ENDANGERED SPECIES

Eighty-six species which occur in Florida are listed by the State of Florida as being either endangered or threatened. Twenty-six of those species are also included on the Federal Endangered and Threatened Species List, giving Florida the dubious distinction of harboring more endangered and threatened species than any state outside Hawaii. While conservation measures regarding a few of those species were taken many years ago, intensive endangered species conservation/research/management has only very recently begun.

Progress:

An endangered species cooperative agreement between the State and the U.S. Fish and Wildlife Service was entered into on October 1, 1976. Florida thus became one of the first states to take advantage of earmarked federal funds provided for by provisions of the Endangered Species Act of 1973. Research projects undertaken and ongoing include those on alligator, bald eagle, brown pelican, Florida panther, and red-cockaded woodpecker. Also funded under the agreement was the publication of a seven-volume report by the Florida Committee on Rare and Endangered Plants and Animals, entitled "Rare and Endangered Biota of Florida." Four of those volumes are nearing completion.

An act entitled the "Florida Endangered and Threatened Species Act of 1977" was passed by the Florida Legislature and became effective 27 June 1977. The Act created a Florida Endangered and Threatened Species Advisory Council and provided for means of monitoring the progress of endangered species management and conservation in Florida.

Federal Recovery Team operations are ongoing for ten endangered species which occur in Florida. Commission personnel are on seven of the teams, including those for the eastern brown pelican, Everglade kite, dusky seaside sparrow, Florida panther, Caribbean manatee, American crocodile, and American alligator. Draft recovery plans have been completed for the eastern brown pelican, red-cockaded woodpecker, and Indiana bat.

Environmental Services

"THE WISE USE OF THE EARTH AND ITS RESOURCES FOR THE LASTING GOOD OF MEN."

Gifford Pinchot

As Florida continues to experience a high growth rate, developmental pressures also continue, creating additional strain on stressed natural ecosystems and native fish and wildlife habitat. Since there cannot be self-sustained fish and wildlife populations without quality habitat, it is important that the state's development be well planned including full knowledge of potential impacts to habitat. Environmental Services reviews proposed development related proposals and provides recommendations on how the project may be constructed to minimize destruction of fish and wildlife resources. By providing wildlife considerations for incorporation into development related decisions, Environmental Services serves the Commission and the people of Florida by helping to conserve our wildlife heritage.

Program: HABITAT ASSESSMENT—PUBLIC WORKS PROJECTS

This program is designed to provide input into proposed developments in wetlands of the state by providing wildlife habitat assessments for permits under consideration by the Department of Environmental Regulation and U.S. Army Corps of Engineers.

Progress:

Field biologists examined 1,002 permit applications requiring approximately 1,300 man days of effort. Recommendations and habitat evaluations were submitted to the appropriate permitting agencies with each application. Considerable priority is placed on our efforts to provide good biological information for decision-makers in the permitting process. In so doing we are able to help conserve many acres of wetlands, our most important wildlife and fisheries habitat.

Program: HABITAT ASSESSMENT—PUBLIC WORKS PROJECTS

Federal public works projects such as dams and levees for flood control, port developments, and Federal highway projects are reviewed for possible effects on fish and wildlife resources. Suggestions are made encouraging the least damaging methods of construction. This is an important program because input into major Federal projects can have longlasting effects on significant numbers of fish and wildlife.

Progress:

Our efforts resulted in the review of 78 projects requiring over 300 man days of work. Public works proposals showed a decline from last year although there was a proliferation of new beach erosion control, beach restoration, and highway projects. The reduction in the number of new proposals may be related to the reluctance of environmentally knowledgeable local sponsors to submit unsound proposals.

Program: A-95 CLEARINGHOUSE

All projects requiring federal funding are circulated for review to interested state agencies through the Department of Administration, Clearinghouse. A diversity of projects which could affect wildlife habitat such as energy plants, housing subdivisions, and land management proposals are reviewed for possible ramifications to wildlife and fisheries resources.

Progress:

Approximately 125 man days were required to review 229 projects for potential impacts. Recommendations from this agency were often incorporated into the project plans significantly reducing damaging impacts to fish and wildlife resources.

Program: FISH AND WILDLIFE TECHNICAL ASSISTANCE TO ENVIRONMENTALLY ENDANGERED LANDS

Environmental Services represents the Commission on the Interagency Planning Committee, established by the Land Conservation Act of 1972, which screens all proposals for the purchase of lands determined to be endangered. Our staff assigns general priorities on the value of the proposals for fish and wildlife.

Progress:

Major projects which have been considered for a number of years finally were approved during this year. Valuable wildlife areas as the Tosohatchee Game Preserve and Little St. George Island were purchased. This year the focus of our endangered lands activities began to shift somewhat from an acquisition phase to the management phase as land acquisition money has now been fully allocated.

Program: FISH AND WILDLIFE ASSISTANCE TO STATE WILDLIFE LAND PLANNING

This area of concern is of increasing importance because of the significant long range impacts of major land use planning on fish and wildlife habitat. The Office of Environmental Services provides technical guidance to land planners and serves as a watchdog in an attempt to prevent land use plans or decisions which will adversely affect wildlife populations in future years.

Progress:

This program has been recently expanded with the addition of new positions for two new, intensive river basin oriented projects. A new position was developed to work on management plans and develop research needs for the newly established Apalachicola Wildlife and Environmental Area which will be partially managed by the Commission. A proposal for a team of biologists was also developed to study the Kissimmee River Basin to ensure that fish and wildlife considerations are incorporated into restoration plans. Also, considerable efforts were expended in providing data for the development of the Statewide Land Plan presently under development by the Department of Administration. Input into this important state plan can and will have impacts for years to come. Our efforts should help maintain quality habitat for wildlife through implementation of policies outlined in the state plan.

Program: FISH AND WILDLIFE TECHNICAL ASSISTANCE TO LOCAL DEVELOPMENT

Regional planning councils, water management districts, county commissions, zoning boards, consultants, and developers can often include a much higher level of fish and wildlife consideration in development when properly advised before their plans become final. This program is designed to provide this advice to local planning and development entities.

Progress:

Considerable effort in this program was directed this year toward providing fish and wildlife input to Florida's developing phosphate industry. Through evaluation of potential mining sites and working directly with the companies, the adverse effects of stripmining on wildlife can be minimized by avoiding particularly valuable areas. Since the companies are required by law to reclaim lands disturbed by mining, we provided specific reclamation recommendations to ensure that lands will be reclaimed so as to benefit fish and wildlife resources.

DEDICATED TO TODAY AND FOR TOMORROW

CREATING A BETTER UNDERSTANDING OF CONSERVATION

"PUBLIC OPINION IS A MYSTERIOUS INVISIBLE POWER, WHICH NOTHING CAN RESIST."

Napoleon I

Information & Education

The Information and Education Division is charged with the responsibility of spreading the conservation message across the state with a goal of creating a better understanding and appreciation for wildlife and the natural environment. The task can take many forms with all media utilized from personal appearances to magazine stories.

From the headquarters in Tallahassee to the regional offices throughout the state, the message is sent out. Areas of operations include the audio-visual section, youth conservation camps, news and information services, hunter and firearm safety training and wildlife reserve. All forces band together to bring the topics home.

Program: **NEWS AND INFORMATION SERVICES**

Keeping the sportsman and citizen up to date on hunting and fishing regulations as well as the principles and concepts behind management techniques has always been a challenging but rewarding responsibility. Efforts flow from headquarters as well as regional offices and run the gamut from newspaper stories to fair exhibits.

Progress:

The most effective tool still is the printed medium with news releases a valuable resource. An extensive revamping of the regulation booklets was completed with the hunting handbook simplified and expanded. A separate fishing regulation summary was extracted from the previous combined handbook and produced. Additionally, that ever important liaison with the backbone of the conservation movement—sportsmen and conservation clubs—was strengthened through increased communication.

Program: **AUDIO-VISUAL**

Believing that a picture can effectively tell the story, the Audio-Visual section is the eyes and ears of the office, providing the sight and sound of the conservation message. Be it still photography or graphic arts, the color and spectacle of our priceless natural heritage comes alive in their hands.

Progress:

The production of color slide lecture series has accelerated. The series, which feature taped narration, have received tremendous response from the varied audiences which have reviewed them and can be produced at considerable savings over films. Among the topics completed and now available for use include an in-depth look at the whys and hows of the Lake Okeechobee Fisheries Utilization Program, a documentary on the Commission and its activities and a look at the future of the Apalachicola River. In addition, a wide range of audio-visual services were provided to Commission personnel, newspapers, magazines, radio and television. As the need to communicate conservation information has grown, new opportunities in the area of electronic media have been explored.

Program: YOUTH CONSERVATION CAMPS

Since its humble beginnings under canvas tents in 1945, the youth conservation camps have grown in size and popularity. This marked the 24th year for the facility in the Ocala National Forest and the seventh for the newcomer in the J.W. Corbett Wildlife Management Area.

Progress:

The two camps enjoyed another successful year as more than a thousand boys and girls passed through the gates for a summer of experiencing Florida's woods and waters. The return rate of repeat campers again was high with some of this year's counselors rising from the ranks of previous campers. The camps did not stay idle after summer was gone. Youth groups from scouts to science clubs utilized the facilities for activities during the other months and environmental instructors found them a perfect outdoor workshop.

Program: HUNTER AND FIREARM SAFETY TRAINING

Although coordinated by five regional Hunter Safety Specialist, the backbone of the Hunter and Firearm Safety Training Program are the volunteer instructors. Coming from every walk of life, these dedicated volunteers contribute time and effort to instruct all ages in the safe and proper means of handling firearms. The program is not designed to turn out sharpshooters, but to instill the respect and responsibility firearms command.

Progress:

This program received national recognition when more than 25,000 persons were certified as Florida Safe Hunters. An average month will see more than 400 men and women from 10 years of age up take the minimum 12-hour course. The course includes not only firearm handling and terminology but basic wildlife identification, survival and first aid tips and hunter ethics. The importance of such training has become more evident across the state and many secondary schools are planning to include it in their curriculum. The program proudly points to the decrease in the number of hunting accidents during the years the instruction has been available.

Program: WILDLIFE RESERVE

In Central Florida, some 60 men and women have been quietly giving up their free time to assist the Commission. They are members of the Wildlife Reserve, a dedicated group of citizen conservationists who let their concern for Florida's wildlife and freshwater aquatic resources take the shape of positive actions. These volunteers provide their own uniforms and transportation to a variety of tasks and, in turn, free Commission employes for other responsibilities.

Progress:

During any 12-month period, it is not unusual to see more than 20,000 hours logged by these Reservists, at a savings to the Commission of more than $90,000. Efforts this year included active participation in the pilot alligator management program to the extent they were responsible for relocation of all nuisance alligators in the Orange County area. Answering complaints has always been one of the services they render, along with manning check stations, posting boundaries, assisting in fishermen creel surveys and helping search and rescue operations. Some of the Reservists have spent their own time and money to become qualified through Police Standards in order to assist the law enforcement division in patrols. If there is a task to be done, whether large or small, a Reservist is there.

PLANNED USE OF A UNIQUE WILDERNESS

Everglades Recreation

> **"IF EYES WERE MADE FOR SEEING, THEN BEAUTY IS ITS OWN EXCUSE FOR BEING. . ."**
>
> **Ralph Waldo Emerson**

Florida's Everglades never ceases to attract people to enjoy this disappearing wilderness. But, without a plan for development, the rich habitat and wildlife resource could be lost forever. It is to this task the Everglades Recreation staff concentrates its efforts. Their job is to develop, operate and maintain the area for the use, enjoyment, appreciation and learning by the general public. This can range from providing the law enforcement power to protect the resource to planning and construction of recreational facilities in keeping with the heritage of the area.

Program: UPGRADING AND EXPANDING EXISTING FACILITIES

Taking what is now available to the public and making it even better is an ongoing project. This growth is always coupled with a concern for the habitat and wildlife resources.

Progress:

Substantial improvements were completed at Everglades Holiday Park during this year. As a result of these improvements the park now has modern facilities for overnight camping and improved parking and access areas. As a result of these improvements the capacity of this facility was increased by 50%.

Program: DAY USE FACILITIES

Excursions to the Everglades don't necessarily mean camping for a week or weekend. Much of the wilderness area is within a few hours drive from major urban areas, making it perfect for an afternoon of fishing or picnicking.

Progress:

Co-ordination with the South Florida Water Management District led to the construction of two new boat ramps located at the S-8 pump station. Along Tamiami Trail temporary facilities

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were constructed at 30-Mile Bend and at the junction of levee 30 to provide access during the widening of the canal. Permanent access facilities will be constructed on a cooperative basis following the canal widening.

Program: EXOTIC PLANT CONTROL

The unique Everglades ecosystem has been threatened by the unchecked growth of non-native plants. Research continues on how to check the spread of such plants without harming the habitat and resources of the Everglades.

Progress:

The Melaleuca has been the subject of much of the research this year. The trees have been spreading at an alarming rate and have proven resistant to 20 herbicides. Three, however, have shown limited success and additional testing was conducted on these three chemicals. In addition, these chemicals were used to control Melaleuca at critical locations within the Conservation Areas.

Program: PRESCRIBED BURNING

During periods of drought, massive fires sweep through the Everglades, destroying millions of acres of vegetation as well as animal life. One way to reduce the number of fires each year has been through carefully controlled burning of sawgrass during certain times of the year.

Progress:

Everglades project staff, wildlife management personnel and State Division of Forestry personnel burned approximately 50,000 acres in Conservation Area 3-A.

Program: HABITAT IMPROVEMENT

The Everglades offers a variety of habitats for wildlife, but due to the nature of the area upland habitats are restricted to a small portion of the area. Fires have further reduced these elevated islands in recent years and efforts have been made to create artificial wildlife islands and to enhance spoil banks created during canal construction projects.

Progress:

A total of 45 islands were created in Conservation Area 3B. These islands were seeded with Pensacola Bahia grass and planted with native trees obtained from local nurseries.

COMMISSION MEMBERSHIP 1976-77

RANDOLPH R. THOMAS, Jacksonville	**Appointed January 22, 1974**
DONALD G. RHODES, West Eau Gallie	**Appointed December 12, 1974**
E. P. BURNETT, Tampa	**Appointed January 17, 1973**
GEORGE G. MATTHEWS, Palm Beach	**Appointed September 9, 1975**
HOWARD ODOM, Marianna	**Appointed January 10, 1972** **Expired January 6, 1977**
R. BERNARD PARRISH JR., Tallahassee	**Appointed January 6, 1977**

FINANCIAL STATEMENT

July 1, 1976 through June 30, 1977

Unencumbered Cash at 7-1-76	$ 185,653
REVENUE:	
General Revenue Funds	4,620,279
Licenses and Permits Funds	6,061,675
Aquatic Weed Funds	1,501,427
Recreation & Parks Funds	450,000
Federal Aid	877,167
TOTAL FUNDS AVAILABLE	$13,696,201
EXPENDITURES:	
Fisheries Management	$ 1,680,841
Wildlife Management	1,718,780
Law Enforcement	4,205,950
Communications	750,303
Administrative Services	1,528,951
Information and Education	751,532
Environmental Protection	188,541
Everglades Recreation	100,108
Aquatic Weed Control	1,174,369
Fixed Capital Outlay	730,510
Land Purchase	339,715
Investments	286,965
TOTAL EXPENDITURES	$(13,456,565)
CASH ON HAND AT 6-30-77	$ 239,636
Unencumbered	$ 187,052
Unencumbered for Land Purchase	52,584

ADMINISTRATIVE STAFF 1976-77

DR. O. E. FRYE JR.
Director

H. E. WALLACE
Deputy Director

ROBERT BRANTLY
Deputy Director

JAMES E. HEATH, Director
Administrative Services Division

JOHN W. WOODS, Director
Fish Management Division

FRED W. STANBERRY, Director
Wildlife Management Division

BRANTLEY GOODSON, Director
Law Enforcement Division

JAMES T. FLOYD, Director
Information-Education Division

R. DANIAL DUNFORD, Chief
Environmental Protection Bureau

Compiled and edited by James T. Floyd

Photo by Ronald Howells

School children examine a young green turtle, soon to be released.

SAVING The GREEN SEA TURTLE

By Dr. Ronald Howells

Six years after they scratch their way out of the nest, the Atlantic Green Sea Turtle *(Chelonia mydas)* travels as much as 1,200 miles to return to a small stretch of sand to start the cycle anew. From feeding grounds in the south, the egg-bearing female turtle will navigate the open waters of the Atlantic to return to the same beach where she nested two or three years earlier.

These giants of the sea, among the heaviest of all living reptiles, have been known to weigh over 800 pounds. These gentle creatures have joined with the whale in becoming over-exploited by man and driven to the point of becoming an endangered species. Prized for their delicious flesh, best of all marine turtles, they have been hunted in the warm Atlantic, from Florida, through the Gulf of Mexico into the Carribean, and off the shores of both Costa Rica and Nicaragua. Green turtle soup made from the cartilage between the body and shell is very popular both here and in Europe. Turtle nests in the sand are dug up, the eggs removed and made into delectable omelets.

Foremost among the hunters have been the Miskito Indians of eastern Nicaragua. Their annual slaughter of green turtles was estimated at over 9,000 in 1972. Traditionally, the Miskitos took by harpoon only, turtles for family use. In recent times, world-wide demand for the meat has caused the development of turtle processing plants along

(continued on next page)

The House of Refuge, above, is on Hutchinson Island on the Atlantic side of the peninsula near Stuart. At right above, a sand flea's view of a sea turtle's eggs being deposited in the moist sand of the beach. At right is a close-up of a young green at the age of release, somewhere between nine months and a year. At far right, young turtles scramble for the relative safety of the briny deep.

(continued from preceding page)

the Nicaraguan coast, and the use of nets by the Indians. These enormous nets are laid over a vast area with two Indians placing over thirty nets in one day. Turtles returning to the shoals from their daily feeding on "turtle grass" are caught up in the nets as they surface to breathe.

This over-exploitation by the Indians has greatly affected their own lives. The Indians have turned from their farming, fishing and hunting, to the cash rewards of turtle catching. Lured by the money, more and more Miskitos are engaged in the hunt, resulting in a lower daily catch. Now they are dependent on the turtles for money, and must buy food for their families in the marketplace.

Some strides have been made to protect the remaining turtles from joining the ranks of their cousins the Ridley, Hawksbill, and Leatherback, who are on the verge of extinction. Both the United States and Costa Rica have passed protective legislation. Laws have been passed prohibiting the removal of turtle eggs by poachers. Several national and international groups have operated research projects with the goal being to assure the survival of the species.

One of the most active and effective programs in researching and repopulating the green sea turtle, is located on Hutchinson Island off the coast of Stuart, Florida, on the Atlantic Ocean. Here, in 1956, a program under the guidance of the State Department of Natural Resources was begun at the House of Refuge. The House, originally constructed in the 1870s by the Federal Government, was a haven for shipwrecked sailors.

During World War II, the House of Refuge served as a base for guarding against enemy intrusion, and for observation of Nazi submarine activity. Today the property, which has been restored by the Martin Historical Society, also serves as a refuge for the turtles.

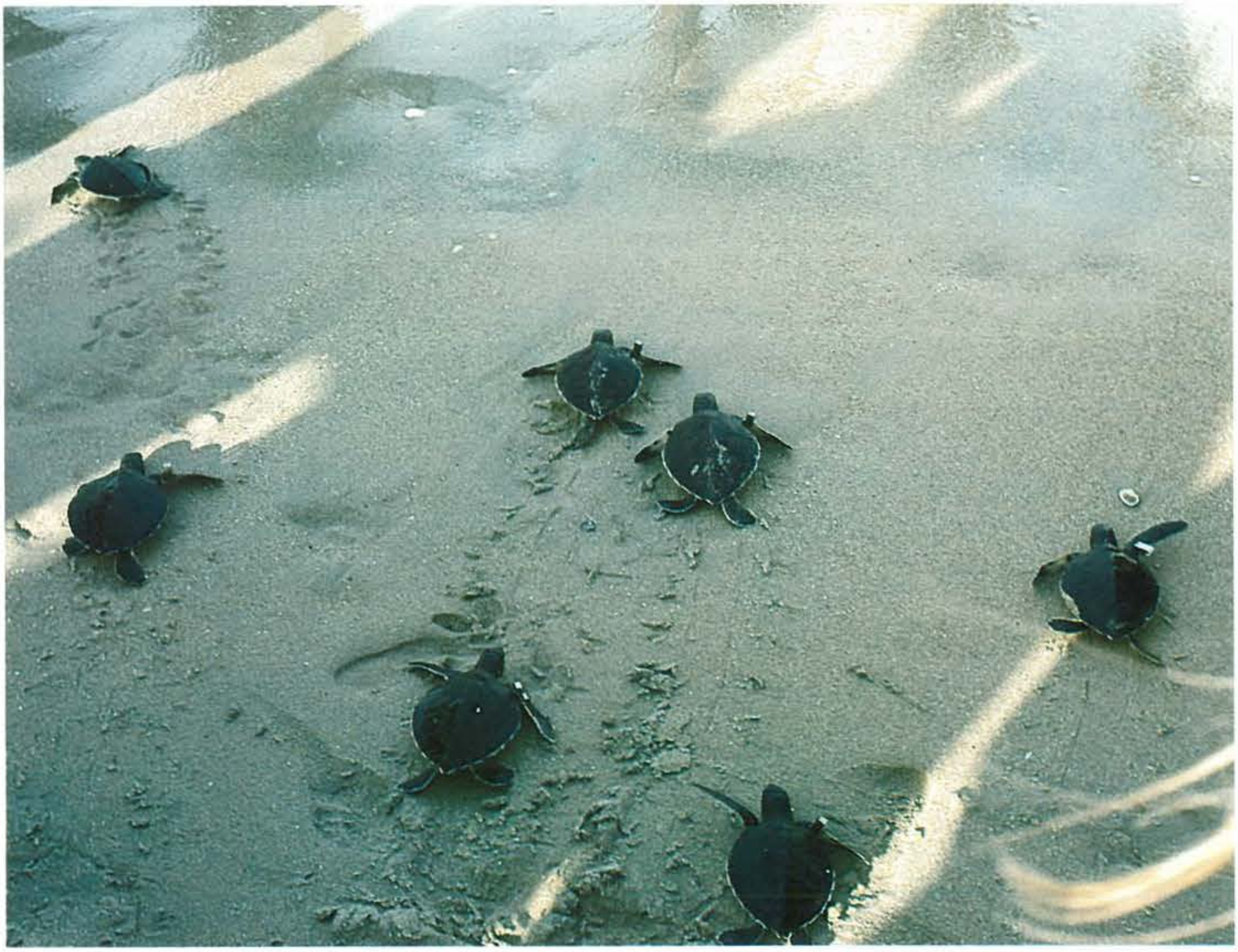
Female turtles return every two to three years to the beaches of Martin County to lay their eggs during the months of May through October. The egg layers crawl out of the surf around 10 p.m. to a spot in the sand well above the high tide water line. Here, the female digs a hole and deposits up to 125 leather-like eggs, then covers them with sand and returns to the sea. Numerous "turtle watchers" are attracted to the beaches for these annual events, with many bringing photographic equipment.

It has been estimated by the local authorities that up to 90 percent of the turtles would not reach one year of age without the intervention of volunteers. During the 60-day incubation period, the eggs may be washed away by an exceptionally high tide or storm, or dug up by raccoons or other animals, namely man. Once they hatch, the baby turtles are easy prey for birds (especially the frigate bird) as they crawl toward the open sea. There, the tender morsels are swallowed by fish. The work of the volunteers and the turtle keepers at the House of Refuge has greatly enhanced the turtles' chances for survival. The eggs are carefully removed from the nests and are hatched in protected sand areas. The new hatchlings are then placed in large saltwater tanks at the Refuge.

Twice yearly, young turtles between the ages of 9 months and one year are taken from their tanks and brought to nearby Stuart public beach to be released in the ocean. At the time of the release each turtle is tagged with a metal band which will help researchers follow its movements throughout the Atlantic.

The most recent release occurred in March 1977, when 135 9-month-olds were brought to the beach. A crowd of 1,500 natives and tourists watched as the volunteers and area school children removed the turtles from buckets and pointed them toward the ocean. Protected with almost a year's growth, the young turtles waded into the surf, to be washed out on each wave. In a short time, all that could be seen were the tips of their noses, as the beautiful little creatures surfaced to breathe. ●

Photos by Ronald Howells



An experiment in quality

Spring Gobbler Hunting

Want a crack at spring gobbler hunting the way it was meant to be? If you like to match wits with Old Tom, you may want to get in on the spring hunt at Fisheating Creek Wildlife Management Area.

The spring hunt there is as much a social experiment as it is a turkey hunt. It has been designed with two major purposes: to limit the harvest of hens and to provide sportsmen with better opportunity for a quality hunt.

As the population of south Florida has grown, so has the number of hunters afield. Fisheating Creek and other popular hunting lands within easy drive of metropolitan areas feel the brunt of this increased hunting pressure. Game managers are not only faced with the problem of maintaining enough game to make hunting worthwhile but are also forced to become "people managers."

With this in mind, a Game and Fresh Water Fish Commission study team has come up with a long range solution which could somewhat revolutionize current game management practices.

For several years, Commission biologists have been concerned that wild turkeys at Fisheating Creek were being overharvested. While the management area normally supports a good turkey population, optimum habitat and most of the turkeys are confined to the relatively narrow creek corridor. Of the 32,000 acres within the management area, less than one-third is turkey habitat.

When turkeys were legal game during the general fall hunting season, hunters congregated along the creek, flushing and shooting most of the turkeys within the first week of the season. Consequently, the population was depleted to the point that the area had to be restocked every year in order to have huntable numbers of turkeys.

As a further consequence, spring gobbler hunting in the area seemed out of the question. The serious turkey hunter, someone who takes the time to learn the habits of wild turkeys and who finds great pleasure in using a call to lure a gobbler, was out of luck.

A fall hunting study was begun in 1968 in an effort to pin-point specific problems associated with increased hunting pressure and to plan a corrective strategy. From the study, a number of reasons have been identified as causing the overharvest including crowded conditions coupled with poor hunter attitude and lack of experience leading to widespread violation of wildlife regulations. Study team members believe that the problem is self-perpetuating, and unless correctives measures are taken, can only grow worse.

To solve such a problem, game managers traditionally have either closed hunting areas or settled for expensive "put and take" practices with little hope for a self-sustaining game population.

But the study team has attempted to come up with a better mousetrap. The new spring hunt is a step toward a positive, long-range solution with an innovative twist.

In order to make management recommendations,

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By Michael Miller

The climax of much planning, hoping, and preparing. A gobbler where it counts—in front of the blind, and right in the open!

Photo by Charles Dickey

(continued from page 36)

the study team has made a major effort to better understand wild turkeys and factors which limit wild turkey populations. Using radio-telemetry, an advanced tracking device, information is gathered from individual turkeys which have been captured, fitted with miniature transmitters and released.

To place the transmitter, turkeys are captured using drugged baits or cannon nets. The transmitter is placed like a pack on the turkey's back, secured with soft surgical tubing fitted like a figure eight underneath the wings. The entire package weighs roughly the same as a single turkey egg and is barely detectable to an observer.

The transmitters do not seem to encumber the turkeys or make them more vulnerable to hunters or natural predators. If the transmitters make any difference at all, the turkeys don't show it. They run and fly as well as those without transmitters.

Using portable receivers with directional sensors, the study team can readily locate an instrumented bird to monitor its physical condition, movements or behavior. Each transmitter is set with a different frequency, allowing identification of each bird.

By tracking turkeys in this manner and by spending hundreds of long, patient, mosquito-bitten hours in observation blinds, Commission biologists have learned a great deal about the movement, behavior and reproduction of these wary birds; where they nest, how many eggs they lay, development of broods, where the young birds roost and much more information necessary for the management of turkeys. Using this method, the study team was able to get a good idea of the percentage of turkeys harvested from the Fisheating Creek population during hunting season.

In years that both gobblers and hens were legal, approximately 80 percent of the monitored birds were killed in the opening week of the season. With such a high harvest rate, the Commission limited the fall season to gobblers only in an attempt to protect hens and to maintain sufficient breeding stock.

At first, the new regulations seemed to be effective. To be certain they were taking legal game, many hunters spared young gobblers as well as hens, waiting instead to see the long beard of an older gobbler before shooting.

In the first year of the "gobblers only" fall season, the opening week harvest figures dropped to 16 percent of the monitored birds with one-third surviving the entire season. Although some hens were killed, they were probably shot accidentally.

The next year, however, opening week harvest figures nearly doubled, and by the third year, the rate had risen to 82 percent. Many hunters were ignoring the "gobblers only" regulation and shooting at any turkey they saw, regardless of sex.

While learning a great deal about turkeys, the study team couldn't help but learn a lot about hunters also. It soon became apparent that some who use the management area care little for regulations or attempts at game management. It also became apparent that unless hunters' skills and attitudes improve, a huntable, self-sustaining flock cannot be maintained in the management area, regardless of the regulations.

It's been said that the farmer is the world's greatest optimist. If so, the hunter must run a close second. Like the farmer, a hunter not only hopes that the next year will be a good one, he *expects* it. And if he's conscientious, he'll do everything within his power to insure that it will be. That's the attitude part.

Skills? The best way to learn is by doing. This is especially true when it comes to hunting, and it's doubtful that anyone ever learned how entirely from a book. Yet, with the high density of hunters and their vehicles using the management area, good skills and attitude are difficult for a new hunter to learn or an old hunter to maintain.

The study team set out to develop a program which would favor those who cared enough about turkey hunting to work at it. They felt it necessary to not only provide turkeys but also to offer suitable conditions for a conscientious hunter.

Lovett Williams, research program leader and himself a long-time turkey hunter, said, "The area normally had quite a few hunters that were, by any measure, good hunters and ethical people. But it is our belief that *poor* hunting over the long run will not continue to attract *good* hunters; it is a degrading phenomenon that feeds on itself as matters go from bad to worse."

Williams and study team members David Austin and Tommie Peoples set out to create a "quality" situation in the spring hunt at Fisheating Creek. The hunt is to be conducted for three years on an experimental basis and is now in its second year. If successful, the special hunt will provide a model to

WILD TURKEY TWINS

Photo by Morrie Naggiar

help prevent similar problems from occurring elsewhere as the state's population continues to grow.

A serious turkey hunter is a purist of sorts and requires a certain set of conditions to be successful. He needs turkeys, preferably in a mating mood; he needs a reasonable chance at luring a gobbler without it being shot by someone else *en route* or, worse, being blasted himself by some careless eager beaver who mistook a cedar box call for the real McCoy. That's assuming he possesses the basic equipment and skills necessary for turkey hunting.

From mid-February well into April, gobbler hunts are held at two-day intervals on the Fisheating Creek Wildlife Management Area. The hunts take place on Tuesdays and Wednesdays and Saturdays and Sundays, allowing short periods during the week when turkeys are not hunted at all.

To keep traffic and commotion to the barest minimum, only turkey hunters are allowed onto the management area during hunt days. Other hunters, and even fishermen, have to try their luck elsewhere. In order to pare down numbers even more, the hunts are limited to a daily quota of 75 hunters. Quota permits may be obtained at Game and Fresh Water Fish Commission regional offices.

Early opening dates are chosen because the study team has found that gobblers will respond to calls at Fisheating Creek that early. Limiting the number of hunters on the management area allows a hunter to yelp up a gobbler with a fair chance at bagging it as well as surviving the experience.

Hopefully, it will also give hunters incentive to be better sportsmen and conservationists and help maintain a healthy, self-sustaining turkey flock in the Fisheating Creek Wildlife Management Area. ●

YOUNG PELICANS ARE HOMELY CRITTERS

Photo by Steve Nesbitt

WHY TRAP PELICANS?

to the pelican snatcher in the midst of a raid, that may indeed be a good question

We were sitting around the table, full of fish and hushpuppies and getting pretty well oiled as the evening wore on. Everybody was swapping lies about rough days in the field and the stories were getting pretty outrageous.

In the midst of it all, Tommie Peoples launched into one of the most God-awful tales I'd ever heard, all about the horrors of pelican trapping.

I was chewing on a cold hushpuppy and must not've appeared sufficiently impressed or maybe I guffawed at a particularly lurid description of the innards of a pelican colony, I dunno . . . but before I had time to think about it, Tommie belched, leaned over the table, raised one eyebrow and invited me along on the annual pelican trapping expedition.

Honor bound, I accepted. *Fool*. It seemed like a great idea at the time.

That was in January. About the middle of April, I heard from Tommie again. Forget? Not Tommie. He said the pelican trapping would take place sometime in June.

Why trap pelicans? Good question.

Historically, brown pelicans were found all along the Gulf Coast, up the Atlantic into the Carolinas and beyond, and the Pacific Coast from California south. In the past decade or so, pesticide-laden runoff and other man-caused wastes have drastically reduced pelican populations in some areas.

In the delta region near the mouth of the Mississippi River, sudden die-offs have occurred, wiping out local pelican colonies. By the late 60's, Louisiana, the Pelican State, was left without pelicans.

In Florida, the big-billed birds have fared better. Whatever poisoned the upper Gulf Coast birds is not yet found in Florida waters in appreciable quantities. At this time, the threat to Florida brown pelicans is mostly due to loss of habitat as the coastline is developed. Due to this threat and the die-offs in other areas, the U.S. Fish and Wildlife Service has listed the brown pelican as "Endangered."

In areas where rookeries are protected from waterfront development, Florida brown pelicans are doing fine. They're doing well enough, in fact, that a healthy colony can easily recover if a hundred fledglings are removed.

You guessed it. Young Florida birds are trapped each year and transported to Louisiana to re-establish pelican colonies there.

Each season since 1968, the Florida Game and Fresh Water Fish Commission, working closely with the U.S. Fish and Wildlife Service and the Louisiana Wildlife and Fisheries Commission, has trapped pelicans and shipped them to Louisiana to re-establish a population there. As Florida's wildlife agency, the Commission is responsible for the program, except for the actual transfer and release of the birds.

Of course, a primary consideration in re-establishing Louisiana's pelicans is to *not* endanger the Florida population in the process.

Each year, surveys are made which help determine whether brown pelicans are declining, increasing or holding their own in Florida. In addition, a U.S. Department of the Interior-sponsored "Recovery Team" has been formed to determine the habitat which is critical to the survival of the brown pelican. Two members of the recovery team,

(continued on next page)

By Michael Miller

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including the chairman, are wildlife biologists working at the Commission's Wildlife Research Laboratory in Gainesville.

The brown pelican project is one of many programs dealing with both game and non-game wildlife that are carried out by the Gainesville lab. The program has been successful. As they've matured, the transplanted pelicans have re-established a breeding population in the delta country and are now producing young birds of their own.

If an unforeseen calamity should result in the loss of Florida's brown pelicans, a healthy breeding population in Louisiana would mean a source of reintroduction stock here.

So in the third week of June, I was on my way to St. Petersburg to meet Tommie and Steve Nesbitt, the project leader. Tommie was about to get his revenge.

The pelicans were to be trapped from an island in Tampa Bay. Since the island is part of the Pinellas National Wildlife Refuge, Glen Bond of the U.S. Department of the Interior was on hand to help. Steve, Tommie, and Bruce Barbour, a Commission wildlife management specialist, would trap and load pelicans in a portable cage. Two men from the Louisiana game agency would ferry the birds to the mainland and load them onto their truck.

The island is shaped like a circle with a bit out of one side. It is completely wooded with red and black mangroves and provides a sheltered rookery for several thousand pelicans as well as cormorants and several species of herons.

In the center is a shallow lagoon several acres in size. Most nesting takes place in the interior mangroves which border the lagoon. Much of the inner circle of mangroves could be seen as we entered the lagoon. The lush green foliage was dotted with nests containing downy young pelicans. Adult birds streamed in and out of the colony bringing food for the young while others, on break, loafed on the lagoon like a fishing fleet at anchor.

High overhead, squadrons of frigate birds rode the breeze, wings set, holding like kites on a string.

Just as I was getting into the sights, the boat nosed aground on the mud bottom. "End of the line," Tommie announced cheerfully as he went over the side to help Steve drag the holding pen to the mangrove edge.

While Tommie returned to the mainland for another holding pen, Steve checked me out on the art of pelican snatching.

The idea is to take fledgling birds that are on the verge of leaving the nest. This means a quicker release in Louisiana with higher chances for the bird's survival.

Pelicans that have developed to that stage are fairly mobile. Some are old enough to fly but still hang around getting free handouts from the old folks.

To catch them, you have to be sneaky. The birds spook easily and are apt to go flopping across the mangrove tops, disrupting the rest of the colony. Steve showed how to get underneath a young pelican, seize it by the leg, secure the neck and wings close to its body to prevent injury, then carry it to the pen.

Looking at a pelican colony from a distance is a nice *visual* experience. Being inside one is quite another matter; *all* your senses get a piece of the action.

The first thing that really hits you is the smell; the aroma of years and years of rotting vegetation, rotting eggs, rotting fish, rotting birds and fresh guano.

Next is the sight, closeup, of the underside of the colony. Young pelicans are homely critters looking more like Pterodactyls than modern birds. Peering at us with beady eyes set in fuzzy, dome-like heads, they opened their mouths as we approached, hoping to be fed.

Slowly, I began to see signs of the everyday tragedy of the colony. Here and there were the remains of adult pelicans hanging head down, ensnared in monofilament line. More frequently, the carcasses of young birds could be seen in the mud where they had fallen from the nest. Unable to be fed, they starved.

The trees themselves were coated with a thick crust of dried guano that flaked off or broke into a cloud of dust as we reached through the branches. It gets into your eyes and I can't say much for the taste.

Pelicans bring food to the nest by swallowing fish, then regurgitating it directly into the mouths of their young. Occasionally they miss their mark and this, too, joins the guano in the branches. This pelican pablum has a singular consistency which identifies it immediately to one who has just inadvertently placed his hand into a gob.

After watching Steve I decided to give it a try. It looked easy; just move under a young bird and grab it by the leg. Before the morning was over, I learned something new about pelicans.

As you hang on, the bird is apt to do several things.

First, it whacks you in the face with its bill. Whether this is an act of war or merely a conditioned response to being force-fed all its life, I don't know. Small matter at the time.

Pelicans seem to learn at an early age to either regurgitate or defecate in moments of stress. Most of the birds I caught were adept at doing either and frequently did both. Needless to say, old you-know-who was below, hanging onto the leg of this fledgling Lord of the Sky. Gravity took care of the rest.

After the initial barrage came the most difficult task of all, the serious business of getting the pelican to the pen.

Mangroves grow in *very* dense stands. To prevent injury, the pelican's neck and wings must be held close to its body, then the whole business threaded carefully through the branches. No easy trick.

Then comes the trip to the pen itself, 50 yards or so through thick foliage and deep mud. Often, the only way in and out of the colony is on hands and knees under the low-growing, tightly interlocked branches.

Once in the pen, the pelicans were carried ashore, loaded aboard a specially equipped truck and driven to Louisiana. Of the 100 birds caught, 98 reached Louisiana in good health and were released in the Chandeleur Islands, part of the Breton National Wildlife Refuge.

The release site was chosen due to its location and quality of habitat. With any luck, most of the transplanted pelicans will survive and reestablish a breeding colony there.

To be honest, I felt no sorrow at their departure. Scratched and weary, covered with mud, guano and worse, I was lying on my back in the shallow water, letting the incoming tide wash away some of the mess.

Tommie waded over and, after careful scrutiny to be sure that I was still living, he issued an invitation to next year's trapping expedition. Though I can't remember the exact wording of my reply, I'm certain that it was in keeping with my appearance at the time, too dirty to describe. ●

Young pelican makes an armful for biologist Steve Nesbitt as he threads his way through the mangrove maze. Pelican snatchers manhandle collection aboard boat—another step on the way to Louisiana.

Photos by Mike Miller

Game Non-Game

the crow is well worth a shotgunner's attention

By CHARLES DICKEY

The main part of the hunting season closed the end of February and this is the time when you wonder why you didn't do more hunting. The deer season gets by before we know it. Although there's a long quail season, we never seem to get out as much as we had planned.

Well, there's some hunting left, most notably the spring gobbler season. The season on cottontails is open all year. Following the crow nesting season, crow shooting will be open on Saturdays and Sundays from May 28 through October 28.

There's a total of 120 days of crow shooting in Florida, all that is allowed under regulations of the U.S. Fish and Wildlife Service. The crow is classified as a migratory bird.

Crow shooting is an excellent way to keep your eyes in practice for the approaching hunting season. The targets are unpredictable and you have to learn to shoot through tree tops. When crows are dive bombing your decoys, you have to learn to swing a shotgun fast.

One advantage of crow shooting is that most farmers will let you on their lands to hunt them. In fact, some farmers, such as pecan grove operators, will welcome you. In autumn, bands of crows really cut into their profits by stealing bushels of nuts.

Perhaps the main reason more gunners don't shoot crows is the difficulty in calling them. If you use a mouth call, it takes a lot of practice to pull and hold crows. However, it's legal to use electronic devices for calling in Florida. There are a number of portable players on the market and with one of these you're an expert on the first trip.

I use a mouth call along with an electronic caller. At times, I can pull the crows better with a mouth call; sometimes when the crows quit responding to a record player, I can turn them on with the mouth call. Usually, the more racket you throw at them the more excited they become. When they become angry, they lose much of their caution and that's when they'll take your hat off!

March, April and most of May, during the hatching and rearing season, are closed to shooting. The rookeries should not be molested. However, it's a good time to learn crow calling, with no gun along.

Crows are fiercely protective of their nesting areas. They are loyal to the crow clan and brethren and are combative. They respond quickly to any tooting you do on a mouth call. You don't have to be an expert to get replies and crows flying in. It's the perfect time to learn the guttural war cries and practice your calling. Through trial and error, you learn which calls pull and hold the crows.

As everyone knows who has hunted the black bandits, you don't try to slip up on crows. That's a losing game. They'll spot you every time and sound the alarm. You pick a spot where you can hide, get all set and then pull the crows to you.

The crow is a smart old bird and has keen eyesight. Once he spots a hunter as the source of the calling, and identifies him as a human, he'll pull out and take the flock with him. It pays to wear camouflage clothing, where you blend into brushy cover and are hard to see and identify.

Dedicated crow hunters camouflage their shotguns, hands and faces. They wear face masks and gloves or use camouflage paint to cover all exposed skin. It pays off in more shooting.

Photo by Charles Dickey

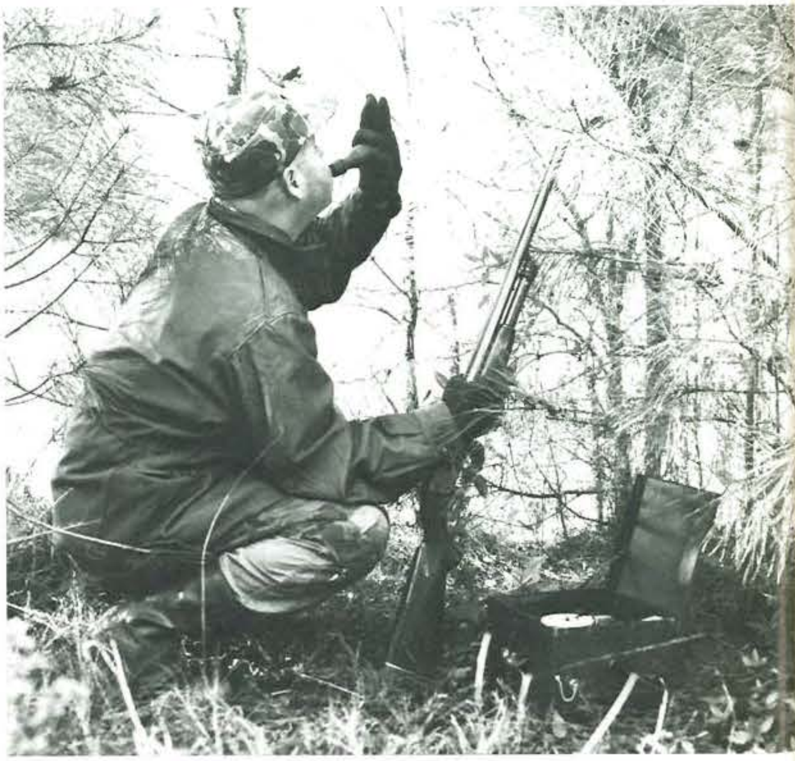

Photo by Morrie Naggiar

Years ago, I used to do a lot of crow shooting in states farther north where they have larger crow populations and huge winter flocks. I always wore camouflage clothing but for a couple of years I went without a mask or gloves. They're hot and bothersome. Then I decided to make a test of the difference if all exposed skin was covered.

The results were immediate and impressive. I shot about twice as many times at each stop when I was completely covered, no doubt resembling a huge blob. Crows will spook from gunshot but if they're really excited they'll keep coming back. When they're at fever pitch, they'll dive in and swing around you time after time. But once they catch on that humans are causing the commotion, they'll leave. Oh, they may stay out at 200 yards and mock you but essentially they won't fly back within shotgun range.

No matter how well you're hidden in pine saplings or other evergreens, when you look up to shoot, a crow will quickly spot your shiny face. If it isn't covered, it's almost like a light bulb.

I tested this by climbing a tall pine tree and looking down at a buddy in various kinds of clothing. Any camouflage helped, but the thing that hid him the most was a face mask. Secondly, the hands, which are bound to be moving, didn't show movement easily when covered by gloves.

From the crow's eye-view, it's easy to spot movement but especially face and hands. The bird is used to being around humans, in fact has adapted well to living among them. Man is his number one enemy. When a crow identifies his enemy with a shotgun, he's going to give the alarm cry and get out of there. It is difficult for a crow to identify a hunter with a face mask and gloves. An attacking flock will catch on after awhile but in the meantime you have gotten a lot of shooting.

I generally use a few decoys but only a small number. I like to be able to pick up and move quickly to another spot when the crows quit responding.

I do not use the decoys so much as attractors or "pullers" as to have something for the crows to see when they come in. As mentioned earlier, I put up all the racket I can when calling crows. When the birds arrive, they expect to see something. I want them to fasten their eyes on crow or owl decoys. If they're focusing on decoys, they're not as likely to see me or the other gunners.

The horned owl is the traditional enemy of crows. The owl cannot catch one in daylight but when crows are roosting at night, the owl can glide in, silently land and take one off a limb for supper. Crows are braver in daylight than in darkness. The sight of an owl in daylight sends crows into battle, with raucous calls for other crows to join the fray.

I have hunted crows with live owls used as decoys. That was before there were a lot of regulations about owls and a permit was needed to have one. The best horned owl decoy was a live one owned by a wildlife officer in Pennsylvania. He named the monster "Open the Door Richard," for a crazy song popular 20 years ago.

(continued on next page)

Using a mouth caller as a change of pace will frequently turn the tables when the lure of the record player starts wearing thin.

Photo by Charles Dickey

Antipathy of crows toward owls helps hunter lure in owls with papier-mache replica.

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Richard hated crows and understood the game. He was chained to a fencepost at different stops and when crows came in sight he would become excited, flop his wings, hiss and try to fly free and attack the crows. In turn, the black marauders quickly realized the owl was helpless and they'd tried to part his hair with their talons.

The crows would become so agitated they'd attack again and again no matter how many we knocked down. We didn't need to use a call. The crows would scream for help and pull every crow within hearing distance.

It was one thing shooting crows over Richard and another traveling in a car or pickup truck with him. He was ill-tempered and as likely to attack me as a crow. His talons would easily wrap around a man's arm and if his claws dug in they had to be pried out, one by one with Richard trying to peck you with his wicked beak.

It's much easier to hunt with a papier-mache owl decoy and considerably safer. They don't try to take your eyes out when you put them in a bush top or on a fencepost.

Two hunters can easily carry an electronic caller, an owl decoy and three or four crow decoys. That's all you need and you can move quickly from one spot to another.

I like to put the decoys up in a small clearing surrounded by medium-sized trees. Incoming crows don't see the decoys until they fly in close. Then they get excited, dive down and hopefully focus on the decoys instead of me.

Once you get your basic equipment, crow shooting is not expensive—other than burning a lot of shells.

Ben Rodgers Lee, world champion turkey caller from Coffeeville, Alabama, starts the spring turkey circuit in Florida and follows the mating season north through Alabama, Tennessee, Pennsylvania and New York and winds up in Vermont in May, where they've done a great job of bringing the wild turkey back.

Ben puts on turkey schools all over the country, one of the best known at Westervelt Lodge, P.O. Box 2362, Tuscaloosa, Ala. 35401. He teaches calling, woodsmanship and hunting techniques.

He's emphatic about the value of camouflage clothing. Not satisfied with much of the clothing on the market, he designed his own with pockets where they ought to be. He also designed a special face mask and gloves.

As a learning aid, Ben has a tape an hour long which plays the various turkey calls as Ben explains when to use them. It's the best training device I've seen. I don't have a musical ear and am always in need of a refresher course. That's one reason I like to play Ben's tape.

Ben's country-boy humor makes learning a pleasure. If you're interested in improving your turkey hunting, write for his catalog of aids to Lee Calls, Inc., Coffeeville, Ala. 36524.

When a burglar breaks in a home, his priority list includes money, jewelry, cameras and guns. Apparently guns are easy to trade or sell.

Most gun collectors today keep their treasures under lock and key, often in secret closets or rooms. Even the casual hunter, who owns only three or four guns, often stores his guns where they are not readily seen.

In Florida, it's difficult to store a gun where it will be free from moisture unless you have special cases. I run into a mildew problem and find I have to check mine about every two months.

When storing guns, most owners tend to put on too much oil. With the modern spray cans, once you start spraying there's a tendency to keep spraying and overload the action. Too much oil simply attracts dust, lint and stray particles and will clog the action eventually.

The least amount of oil you put on the metal the better. All you need to do is provide a thin film of oil to protect the surface from oxidization.

When handling a gun, try to remember that your palms and fingertips sweat almost continuously and there's always a little salt present. One salty fingerprint left on gun metal for awhile and you'll probably have a rust spot starting.

There are a great many cleaning and oiling products on the market. For the past two years, I've been testing those made by Totally Dependable Products and have had excellent luck with them. For information on their cleaners and lubricants, write Bruce Weeber, Totally Dependable Products, 240 King Street, Pottstown, Pa. 19464. ●

HATCHERY-REARED SNOOK

South Florida's fighting fish, the snook—which have the propensity to explode as if they were shot out of a cannon when hooked—are being artificially spawned and reared in a pioneer research project by the Game and Fresh Water Fish Commission.

Close to 150 of the young fighters made history last fall when they were released into the fresh waters of Lake Bonny near Lakeland.

The release was one of the high points of more than four years of work towards the artificial propagation of the popular saltwater fish which lives in the bays, passes and rivers riddling Florida's tropical east coast and its lush Ten Thousand Islands.

Commission biologists hope to eventually produce enough snook to stock suitable warm waters of the state. Plans call for development of a means to add snook to the freshwater fisherman's creel.

The snook project first began in Lemon Bay at Englewood in 1974 under the direction of biologist Lothian Ager. The Commission began a feasibility investigation of artificial snook propagation using the facilities of the Collier County Conservancy's Marine Research Center located on Henderson Creek in the south east corner of the Rookery Bay Wildlife Sanctuary.

In 1975 a cooperative program was established between the Commission and the Conservancy to base research operations at Rookery Bay.

"Although many other species of game and commercial fishes are commonly cultured, the snook presented a challenge since it had never been artificially reproduced," recalled Phil Chapman, project leader.

"Not only was there relatively little known about the snook's early life history in its natural environment, but there weren't any prior research findings on snook culture which might have been helpful in directing our efforts," Chapman said.

Undaunted, Commission biologists, led by Chapman, began to slowly develop a now highly successful artificial spawning process.

Brood fish were collected on sport fishing tackle in or around the Gulf passes lacing the area and transported to holding tanks at Rookery Bay.

There, suitable females were injected with a human hormone to accelerate egg development and induce spawning. When ovulation was detected, eggs were manually stripped from the mothers into vessels and fertilized by milt from males.

Within 18 hours, snook larvae began to hatch and were transferred to larger containers. Chapman said as many as 1½ million eggs can be produced by a single 20-pound female, but early attempts at rearing the tiny snook fry (less than .06 inches at hatching) were disappointing.

Most died within several days, but in 1975 a few lived to 10 days at the Commission's Boca Raton Exotic Fisheries Research Laboratory.

Before the 1976 spawning season, three earthen ponds were constructed back at Rookery Bay and leased to the Commission for snook production.

Because of low oxygen conditions encountered while learning to manage the salt water ponds during their first year of operation, none of the thousands of baby snook survived.

However, despite the pond production failure, 20 fingerlings artificially spawned at Rookery Bay were reared at the Boca Raton lab by biologist Paul Shafland and his staff. This marked the first artificial culture of the species.

Within six months, the snook--some of which had grown to 7½ inches--were taken to a fresh water lake in South Florida to be released.

With the knowledge and experience gained in 1976, the 1977 phase of the study began in May with great confidence and in the new Game Fish Propagation Laboratory built by the Conservancy from monies

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Eligible female snook is injected with human chorionic gonadatropin to accelerate egg development and induce ovulation.

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provided by the John W. Dearholt Memorial Fund.

"I felt extremely confident the ponds would produce this year," said Chapman. "Once water quality and food production could be maintained at an optimum level, I believed we'd be well on our way to mass producing fingerlings for stocking."

His confidence was justified at daybreak on July 25th, when the first of the three ponds was drained. With both Commission and Conservancy officials holding their collective breaths, a total of 145 six-week-old snook, ranging from one to two and a half inches, were seined from the pond.

Later that month, 147 more small fingerlings up to two inches were harvested from the second pond while the third failed to produce.

All the snook were transported to Boca Raton where they were acclimated to fresh water and stocked in ponds loaded with tiny fish to encourage additional growth.

Chapman, along with his eager assistants, Wes Fish, Ken Jones, George Horel and Jeff Spicola, wanted to restock the ponds before winding down the project for the season, but felt the major spawning run was over.

"I feel we have accomplished a great deal in a relatively short time," he explained. "The long hours have been worthwhile now that we know that large scale production of fingerling snook is within reach.

"We're already looking forward to next year, anticipating an early start and improved techniques which will hopefully put us that much closer to our objective," Chapman said.

The project leader added, "We're very appreciative of the new lab facility provided by the Conservancy and Mrs. Dearholt here at Rookery Bay and their continued support in our work."

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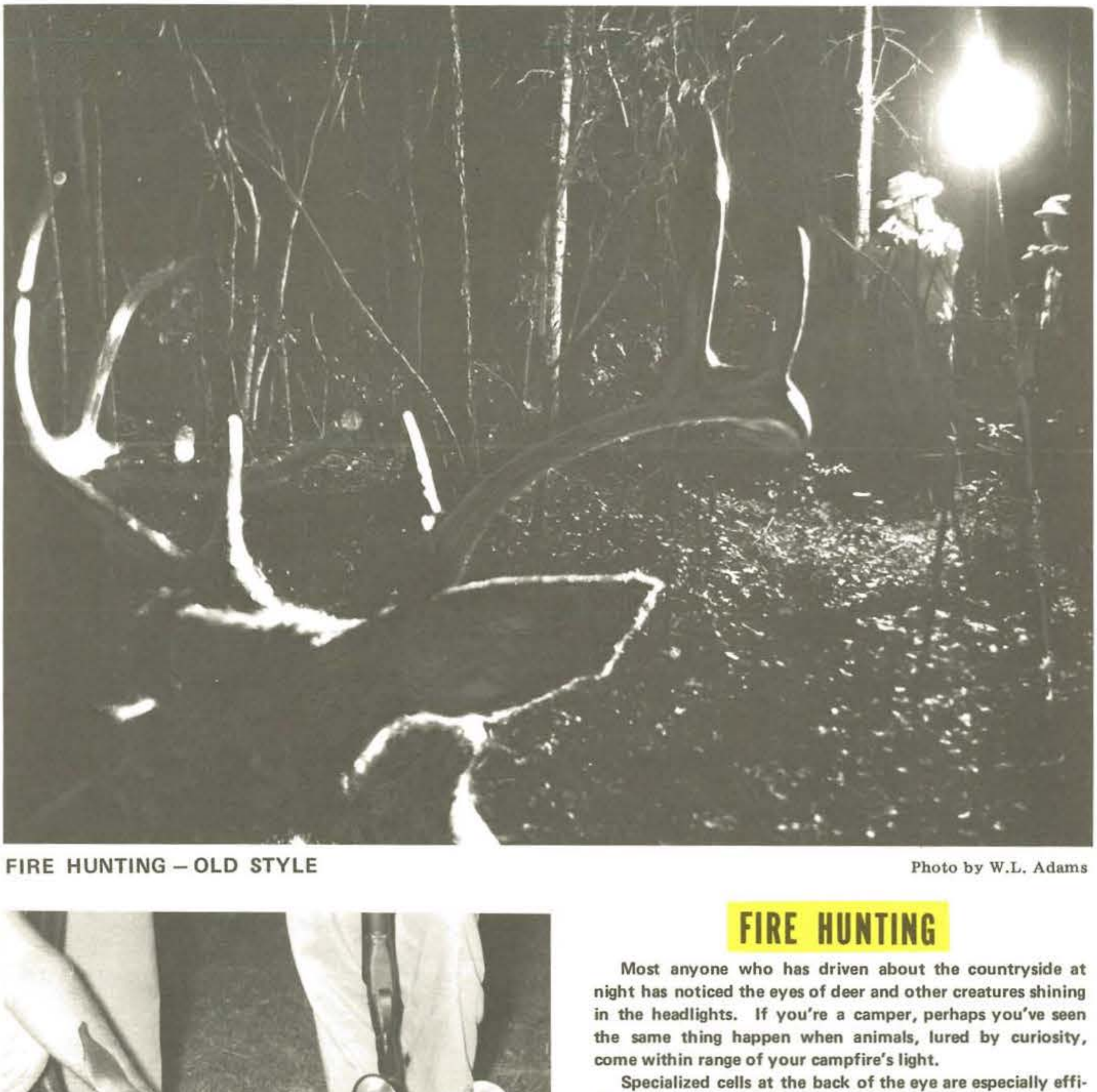
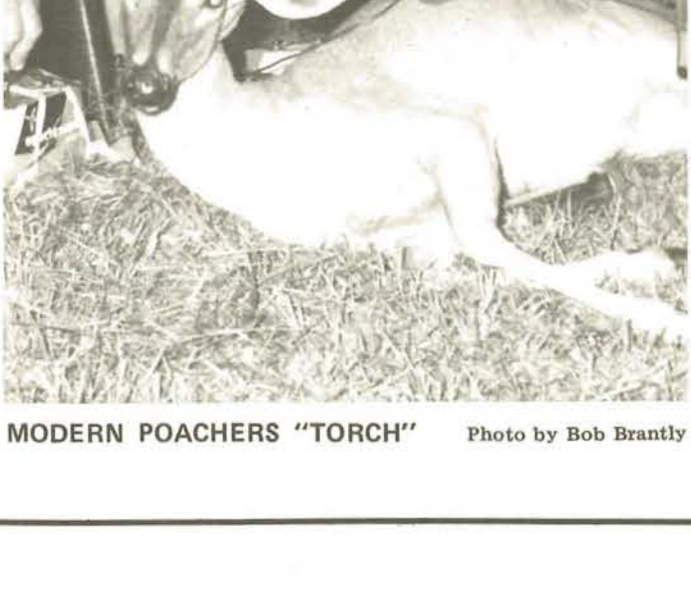


FIRE HUNTING – OLD STYLE Photo by W.L. Adams



MODERN POACHERS "TORCH" Photo by Bob Brantly

FIRE HUNTING

Most anyone who has driven about the countryside at night has noticed the eyes of deer and other creatures shining in the headlights. If you're a camper, perhaps you've seen the same thing happen when animals, lured by curiosity, come within range of your campfire's light.

Specialized cells at the back of the eye are especially efficient at gathering light which enables certain animals to see "in the dark." These "cone" cells reflect light which means the creature's eyes shine when there is enough illumination to create a good reflection. Many animals, notably deer, appear to be dazzled by the light and will stand staring, almost unaware of possible danger.

This fact has long been known. The tribesmen of the northeastern United States, for example, hunted from canoes, using a torch to shine deer and other animals along the shore, enabling them to get within bow range. Early European settlers were quick to adopt the fire hunting technique. Development of the battery-operated "electric torch" gave the night hunter a more effective tool.

Long outlawed in the interest of conservation, shining or spotlighting is a method used by today's poacher. The practice is still commonly called fire hunting, even if the "fire" is now a 12-volt spotlight.

SEA OATS **Photo by Lynn Stone**

Beauty has been their downfall. Graceful sea oats thrive on shoreside dunes where few other plants can grow. The deep probing roots hold the sandhills together. They are fragile giants that can hold the errosive forces of wind and wave at bay, but they're no match for the shears of the commercial harvester. Protected by law, plant poachers nonetheless persist in staging forays against the sea oat stands.